

*Final*

**ENVIRONMENTAL ASSESSMENT  
Addressing an  
Army and Air Force Exchange Service (AAFES)  
Lifestyle Center  
at  
Eglin Air Force Base, Florida**



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**96TH AIR BASE WING  
EGLIN AIR FORCE BASE, FLORIDA**

**RCS 06-925 & 08-085**

**NOVEMBER 2008**

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**FINDING OF NO SIGNIFICANT IMPACT FOR  
CONSTRUCTION OF ARMY AND AIR FORCE EXCHANGE SERVICE  
LIFESTYLE CENTER  
AT EGLIN AIR FORCE BASE, FLORIDA  
RCS 06-925/08-085**

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Pursuant to the Council on Environmental Quality's regulations for implementing procedural provisions of the National Environmental Policy Act (40 Code of Federal Regulations [CFR] 1500–1508), 32 CFR Part 989 and Department of Defense Directive 6050.1, the U.S. Air Force has conducted an Environmental Assessment (EA) to identify potential effects associated with constructing and operating the Army and Air Force Exchange Service (AAFES) Lifestyle Center at Eglin Air Force Base, Florida. The EA is incorporated by reference into this finding.

#### **INTRODUCTION**

AAFES provides merchandise and services to active-duty, guard, and reserve members; military retirees; and their families on USAF and Army installations. The mission of AAFES is to provide quality goods and services at competitively low prices and generate earnings to support morale, welfare, and recreation (MWR) programs. The sale of AAFES merchandise and services is used for two general purposes: (1) improve service members' quality of life by providing a dividend to support MWR programs; and (2) construct new AAFES facilities or replace old ones. At Eglin AFB and nearby installations such as Hurlburt Field, AAFES maintains a wide range of retail, food, and service facilities, ranging in size from the Base Exchange (BX) to small ancillary facilities. AAFES facilities at Eglin AFB total approximately 179,300 square feet (ft<sup>2</sup>). The majority of this space is within the main BX, which also houses a food court and concessions.

#### **PURPOSE OF AND NEED FOR THE PROPOSED ACTION**

The purpose of the Proposed Action is to provide a modern sales, entertainment, and dining center at Eglin AFB for military personnel and their families. This mixed use Lifestyle Center would offer the Eglin AFB community a modern one-stop destination with name-brand shops, eateries, and entertainment, such as a movie theater or bowling alley, in a town center-style development.

The current growth projections and the impact of BRAC on Eglin AFB indicate that over the next 5 years there will be an almost 12 percent increase in the number of AAFES customers. The Lifestyle Center is needed because the current facilities will be unable to provide the necessary levels of service and quality merited by AAFES customers. Expansion of the retail operations in both size and service variety is necessary to fit the growth and changing diversity of the customer base. Additionally, Eglin AFB is experiencing a shortage of administrative and storage space. By constructing the Lifestyle Center, approximately 130,000 ft<sup>2</sup> of existing space used for AAFES facilities on base could be reused as office or storage space.

#### **DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES**

**Proposed Action.** AAFES proposes to construct a Lifestyle Center at Eglin AFB. The Lifestyle Center would be composed of two key facilities, one at each end of the development.

Preliminary plans position the main BX at one end of the Lifestyle Center, and another major establishment, such as a first-run movie theater, at the other end. Between these two anchors would be a Main Street-style center featuring complementary name-brand retailers and tenants that are found in modern retail destination centers throughout the country, such as name-brand apparel stores, book stores, sit-down restaurants and food courts, and various service tenants. A child development center would also be integrated into the site design. The Lifestyle Center would be intended to appeal to and satisfy the needs of the modern military consumer. The proposed Lifestyle Center is anticipated to create approximately 850 new jobs in the local area. The Lifestyle Center is proposed to be constructed on 100 acres of an approximate 200-acre parcel of Eglin AFB reservation property. The proposed site is approximately 0.5 miles northwest of Eglin's West Gate. The proposed site is bounded by State Route (SR) 189 (Lewis Turner Boulevard) to the north, Sunset Lane to the south, Eglin Parkway/SR 85 to the east, and Poquito Road to the west.

The Proposed Action consists of constructing approximately 750,000 ft<sup>2</sup> of retail space in a town center-style configuration. Approximately 3,750 parking spaces would also be constructed. Based on the number of spaces, the total parking lot size, including drive lanes and access roads, would be approximately 1,687,500 ft<sup>2</sup> (39 acres), based on an industry standard multiplier of 450 ft<sup>2</sup> per parking space. In addition to the area taken up by retail space and parking, approximately 10 acres would be used for sidewalks, pathways, courtyards, walking zones, and other elements required to tie the Lifestyle Center together. A child development center is also planned to be integrated into the Lifestyle Center and would occupy a total of 10 acres of the site. The balance of the 100-acre site, approximately 24 acres, would be used for landscaping or open green space, or other preservation needs.

**Commissary Alternative.** Under the Commissary Alternative, the base Commissary would move to the proposed Lifestyle Center. Under this alternative, an additional 100,000 ft<sup>2</sup> of retail space would be constructed at the proposed site. This additional space would also require an additional 500 parking spaces, which translates into an additional 225,000 ft<sup>2</sup> (5 acres) of pavement. Under this alternative, the existing commissary space on base would be reused as future administrative or storage space.

**No Action Alternative.** Under the No Action Alternative, AAFES would not construct a Lifestyle Center at Eglin AFB. Customers would continue to use the existing congested, undersized, and dispersed facilities. Continued need to use the inconvenient retail outlets on Eglin AFB would result in customer dissatisfaction and low morale. This could result in loss of revenue for the MWR fund for airmen.

#### **ALTERNATIVES CONSIDERED BUT NOT EVALUATED FURTHER**

Two alternative sites were considered and eliminated from further analysis. One alternative eliminated from analysis was to construct the Lifestyle Center on a site adjacent to the north side of the West Gate, bound by SR 85 to the west, Lewis Turner Boulevard to the south, and Eglin Boulevard, including the West Gate, to the east. This alternative was eliminated from further detailed analysis because of future noise conflicts due to the anticipated arrival of the Joint Strike Fighter (JSF) aircraft. Additionally, construction of this alternative presents potential compatibility issues with planned expansion of the West Gate. The second eliminated alternative would have been within the base housing area. It was eliminated from detailed analysis due to

potential JSF noise issues and the potential for major impacts on the West Gate as most traffic accessing this site would likely utilize the West Gate.

## ENVIRONMENTAL CONSEQUENCES

### Proposed Action—Preferred Alternative

**Acoustical Environment.** Short-term minor adverse effects are anticipated as a result of the construction activities and long-term minor adverse effects are anticipated as a result of vehicular traffic. Implementation of the Preferred Alternative would have short-term minor adverse effects on the noise environment from the use of heavy equipment during construction activities. Long-term minor adverse effects are anticipated as a result of vehicular traffic. The increased traffic would likely travel along SR 189 and Eglin Boulevard, which are already heavily utilized. Consequently, the additional traffic would likely cause minor increases in noise levels for noise-sensitive populations on those roadways. However, additional traffic could travel on SR 85, Poquito Road, and Sunset Lane. These roadways are not as heavily traveled as SR 189 and Eglin Boulevard and there is a greater number of residential homes adjacent to the roads. Consequently, additional traffic on SR 85, Poquito Road, and Sunset Lane could cause minor long-term adverse noise impacts on noise-sensitive populations.

**Land Use.** No adverse effects would be anticipated with the construction of the Preferred Alternative. The proposed site is affected by noise levels from aircraft operations at Eglin AFB. The highest noise levels are present at the northeastern end of the site and the lowest noise levels are present at the southwestern end of the proposed site. Land use compatibility varies depending on the intended use of the area and the noise level. The Preferred Alternative would result in temporary minor adverse impacts due to an increased presence of construction vehicles and disturbances related to construction activities. However, these activities are not expected to result in incompatible land use. Most of the AAFES Lifestyle Center would be located in a compatible noise zone. Land use for the AAFES Lifestyle Center would include residential, commercial, and office space. Although these land uses would be compatible with surrounding land use, it is recommended that residences within this zone be constructed using sound insulation treatments to ensure that noise levels inside housing are sufficiently reduced. Two Child Development Centers consisting of one building each and a consolidated administrative facility would also be components of the AAFES Lifestyle Center and would be in the southwestern region of the proposed site. The Child Development Centers would be situated in a compatible noise zone.

**Air Quality.** The Preferred Alternative would have short-term and long-term minor adverse effects on air quality as a result of the slight increase in pollutant emissions. The effects on air quality are not expected to be significant.

**Geological Resources.** Negligible to minor long term adverse impacts would be expected from implementation of the Preferred Alternative. The type of soil in the proposed site could pose construction issues due to slope stability and shrink swell concerns. Best Management Practices (BMPs) to control erosion and sedimentation will be implemented in accordance with Federal, state and local statutes.. Negligible to minor long-term adverse impacts on topography would be expected due to grading and filling activities during construction.

**Water Resources.** Short-term and long-term adverse effects on water resources would be expected under the Preferred Alternative. Implementation of BMPs, appropriate management of storm water during and following construction, and adherence to all required permits would reduce the potential for adverse effects. Minor short-term adverse effects would result from soil disturbance from construction activities. Long-term negligible to minor adverse effects would result from small increases in consumption of potable water for consumption and other uses.

**Biological Resources.** Effects on biological resources range from short-term and long-term negligible to moderate adverse under the Preferred Alternative. Permanent loss of and long-term direct moderate adverse effects on approximately 100 acres of sand-pine, scrub brush and longleaf pine woodland and the associated vegetation would occur in association with construction of the proposed facilities. Short-term moderate adverse effects would occur on wildlife due to their relocation as a result of temporary noise disturbances associated with construction activities. Direct long-term moderate adverse effects could occur from the mortality of small less-mobile species as a result of collision with construction equipment, which would be mitigated through construction monitoring and avoidance techniques. Potential long-term negligible to minor and short-term negligible to minor adverse impacts could occur on protected and sensitive species which could be present on the proposed site. BMPs would be adhered to and field survey would be conducted to mitigate the impacts on all potential listed species prior to construction. No direct effect on wetlands would be expected.

**Cultural Resources.** Direct adverse impacts of two archaeological sites in the northern portion of the property would be expected due to soil disturbance during construction. Mitigation of these two archaeological sites would be necessary under this alternative. Mitigation could include avoidance, fencing, or data recovery and would be coordinated with the Eglin AFB Cultural Resources Branch (96 CEV/CEVH). Consultation with the State Historic Preservation Office would be required.

**Socioeconomic Resources and Environmental Justice.** The Preferred Alternative would result in minor to moderate beneficial effects on socioeconomic resources and environmental justice. The Lifestyle Center would result in short- and long-term increases in civilian employment opportunities.

**Traffic.** The Preferred Alternative is anticipated to have no adverse effects on the surrounding transportation system. During construction, the anticipated volume of construction vehicles will be very low in comparison to existing traffic volumes. Once the Lifestyle Center is open, the Preferred Alternative is expected to have no adverse effects on traffic operations in the vicinity of the site. Roadways and intersections analyzed will operate within the acceptable limits described by FDOT.

**Utilities and Infrastructure.** No adverse impacts would be expected on communications, sanitary sewer and wastewater systems, water supply, liquid fuel, natural gas and electrical utilities.

Minor short-term and long-term impacts would be expected on solid waste management as a result of the generation of construction debris, in addition to packaging debris and food waste that would be generated from retail stores and restaurants.

**Hazardous Materials and Wastes.** Minor short-term and long-term adverse effects on hazardous materials and wastes would be expected under the Preferred Alternative. The AAFES Lifestyle Center would be required to develop pollution prevention management programs in accordance with the Emergency Planning and Community Right-To-Know Act (EPCRA) and the Pollution Prevention Act of 1990. Management of the materials would be consistent with the installation *Hazardous Materials Management Plan* and the Response Plans or Spill Prevention, Control, and Countermeasure Plans. Limited to no hazardous waste is expected to be generated during everyday operations of the AAFES Lifestyle Center due to its use for retail tenants. If necessary, the *Hazardous Waste Management Plan* provides plans and procedures for handling, storing, and disposing of hazardous materials. The net change in hazardous materials and waste from the AAFES Lifestyle Center would likely not require a permit under RCRA.

### **Commissary Alternative**

The environmental, geological, physiological, and natural conditions of this alternative are very similar to that of the Preferred Alternative, therefore the environmental consequences of establishing the Commissary Alternative would be very similar. If the Lifestyle Center were constructed under the Commissary Alternative, the impacts would be similar or slightly greater to those expected under the Preferred Alternative, but would not rise to significant levels.

### **CUMULATIVE EFFECTS**

Projects identified for evaluation in the context of the cumulative effect analysis include the following: the Emerald Coast Technology and Research Campus (ECTRC); the Base Realignment and Closure (BRAC) Action; Military Family Housing Demolition, Construction, Renovation, and Leasing Program at Eglin AFB; Okaloosa Regional Airport Expansion; Veterans Administration Community-Based Outpatient Clinic; and projects through the Florida Department of Transportation. The cumulative effects from these projects could result in impacts on resources such as land use compatibility, biological resources, and infrastructure. However, the environmental analyses completed for each of these projects has resulted in recommended mitigation measures for resource areas with potential adverse impacts. If the mitigation measures are incorporated, the impacts on resource areas should be minimized.

### **PUBLIC REVIEW AND INTERAGENCY COORDINATION**

A public notice was published in the Northwest Florida Daily News on September 5, 2008 inviting the public to review the Draft EA and Draft Finding of No Significant Impact (FONSI). The comment period closed on October 5, 2008.

### **FINDING OF NO SIGNIFICANT IMPACT**

After a review of the EA prepared in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality regulations, the USAF's Environmental Impact Analysis Process, 32 Code of Federal Regulations 989, as amended, and

receipt of public comments on the document, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment and, therefore, an Environmental Impact Statement does not need to be prepared. This decision has been made after taking into account all submitted information and considering a full range of practical alternatives that would meet project requirements and that are within the legal authority of USAF.



DENNIS D. YATES, Col, USAF  
Commander

Date: 18 Dec 08



## COVER SHEET

**FINAL  
ENVIRONMENTAL ASSESSMENT ADDRESSING AN  
ARMY AND AIR FORCE EXCHANGE SERVICE (AAFES)  
LIFESTYLE CENTER AT EGLIN AFB, FLORIDA  
RCS 06-925/08-085**

**Responsible Agencies:** U.S. Air Force (USAF), 96th Air Base Wing (96 ABW), Eglin AFB, Florida, and Army and Air Force Exchange Service (AAFES), Dallas, Texas.

**Affected Location:** Eglin AFB, Florida.

**Report Designation:** Environmental Assessment (EA).

**Abstract:** AAFES proposes to construct a Lifestyle Center at Eglin AFB. The Lifestyle Center would be composed of key facilities, one at each end of the development. Preliminary plans position the main Base Exchange (BX) at one end of the Lifestyle Center, and another major establishment, such as a first-run movie theater, at the other end. Between these two anchors would be a Main Street-style center featuring name-brand retailers and tenants that are found in many modern retail destination centers throughout the country such as name-brand apparel stores, book stores, sit-down restaurants and food courts, and various service tenants. The Lifestyle Center would be designed as an architecturally pleasing one-stop destination for shopping, dining, and entertainment. It would be intended to appeal to and satisfy the needs of the modern military consumer. The proposed Lifestyle Center is anticipated to create approximately 850 new jobs in the local area.

This EA evaluates the potential environmental consequences of the Proposed Action and alternatives, including the No Action Alternative, on the following 11 general impact topics: acoustical environment, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, traffic, utilities, and hazardous materials and wastes.

### Privacy Advisory

Your comments on this document are requested. Letters or other written or oral comments provided may be published in the EA. As required by law, comments will be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to comment on this document or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and the specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the EA.



*Final*

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LIFESTYLE CENTER  
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 EGLIN AIR FORCE BASE, FLORIDA**

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## ABBREVIATIONS AND ACRONYMS

96 ABW	96th Air Base Wing	DOD	Department of Defense
96 CEG/CEVH	Eglin AFB Cultural Resources Branch	ECTRC	Emerald Coast Technology and Research Campus
AAC	Air Armament Center	EIS	Environmental Impact Statement
AAFES	Army and Air Force Exchange Service	EO	Executive Order
ACM	asbestos-containing material	EPCRA	Emergency Planning and Community Right-To-Know Act
AFB	Air Force Base		
AFI	Air Force Instruction	ERP	Environmental Resource Permit
AFMC	Air Force Materiel Command	ESA	Endangered Species Act
AFPD	Air Force Policy Directive	F.A.C.	Florida Administrative Code
APE	Area of Potential Effect	FDEP	Florida Department of Environmental Protection
AQCR	Air Quality Control Region	FDOT	Florida Department of Transportation
ARPA	Archaeological Resources Protection Act	FEMA	Federal Emergency Management Agency
AST	aboveground storage tank	FLEPPC	Florida Exotic Pest Plant Council
BMP	Best Management Practice	FNAI	Florida Natural Area Inventory
BRAC	Base Closure and Realignment Commission	FONSI	Finding of No Significant Impact
BX	Base Exchange	ft <sup>2</sup>	square feet
CAA	Clean Air Act	FWC	Florida Fish and Wildlife Conservation Commission
CDC	Child Development Center	FY	fiscal year
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	HAP	Hazardous Air Pollutant
CEQ	Council on Environmental Quality	HAZWOPER	Hazardous Waste Operations and Emergency Response Standard
CFR	Code of Federal Regulations	ICRMP	Integrated Cultural Resources Management Plan
CHELCO	Choctawhatchee Electric Cooperative, Inc.	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
CO	carbon monoxide	ITE	Institute of Transportation Engineers
CO <sub>2</sub>	carbon dioxide	JSF	Joint Strike Fighter
CWA	Clean Water Act		
CZMA	Coastal Zone Management Act		
dBA	A-weighted decibels		
DNL	Day-Night Average A-weighted Sound Level		

LBP	lead-based paint	PM <sub>10</sub>	particulate matter equal to or less than 10 microns in diameter
LOS	level of service	Pb	lead
MGD	million gallons per day	pCi/L	picocuries per liter
MPPCSMI	Mobile (Alabama)-Pensacola-	POL	petroleum, oil, and lubricants
AQCR	Panama City (Florida)-	PSD	Prevention of Significant Deterioration
	Southern Mississippi Air Quality Control Region	PTA, Inc.	Prentice, Thomas, and Associates, Inc.
MOU	Memorandum of Understanding	RCRA	Resource Conservation and Recovery Act
MS4	Municipal Separate Storm Sewer System	ROI	region of influence
MSL	mean sea level	SARA	Superfund Amendments and Reauthorization Act
MW	megawatts	SIP	State Implementation Plan
MWR	morale, welfare, and recreation	SR	state route
NAAQS	National Ambient Air Quality Standards	SHPO	State Historic Preservation Office
NAGPRA	Native American Graves Protection and Repatriation Act	SO <sub>x</sub>	sulfur oxides
NEPA	National Environmental Policy Act	SO <sub>2</sub>	sulfur dioxide
NHPA	National Historic Preservation Act	SR	State Route
NO <sub>2</sub>	nitrogen dioxide	SS	sacred sites
NO <sub>x</sub>	nitrogen oxides	SSC	Species of Special Concern
NOA	Notice of Availability	SWMP	Storm Water Management Program
NPDES	National Pollutant Discharge Elimination System	TCP	Traditional Cultural Properties
NRCS	Natural Resources Conservation Service	TMDL	Total Maximum Daily Load
NRHP	National Register of Historic Places	tpy	tons per year
NRS	Natural Resources Section	UF-REEF	University of Florida Research Engineering Education Facility
NFWFMD	Northwest Florida Water Management District	USACE	U.S. Army Corps of Engineers
O <sub>3</sub>	ozone	USAF	U.S. Air Force
OSHA	Occupational Safety and Hazard Administration	USEPA	U.S. Environmental Protection Agency
PM <sub>2.5</sub>	particulate matter equal to or less than 2.5 microns in diameter	USFWS	U.S. Fish and Wildlife Service
		U.S.C.	United States Code
		UST	underground storage tank
		VOC	volatile organic compound

# 1. Purpose of and Need for the Proposed Action

## 1.1 Introduction

This Environmental Assessment (EA) assesses the potential environmental consequences of the Army and Air Force Exchange Service's (AAFES) proposal to construct a Lifestyle Center that would include mixed retail, entertainment, and dining establishments at Eglin Air Force Base (AFB), Florida. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) and facilitates compliance with the U.S. Air Force (USAF) *Environmental Impact Analysis Process*, as set forth in 32 Code of Federal Regulations (CFR) Part 989, as amended; Council on Environmental Quality (CEQ) Regulations; and Department of Defense (DOD) Instruction 4715.9, *Environmental Planning and Analysis*.

AAFES provides merchandise and services to active-duty, guard, and reserve members; military retirees; and their families on USAF and Army installations. The mission of AAFES is to provide quality goods and services at competitively low prices and generate earnings to support morale, welfare, and recreation (MWR) programs (AAFES 2008). The sale of AAFES merchandise and services is used for two general purposes: (1) improve service members' quality of life by providing a dividend to support MWR programs; and (2) construct new AAFES facilities or replace old ones. At Eglin AFB and nearby installations such as Hurlburt Field, AAFES maintains a wide range of retail, food, and service facilities, ranging in size from the Base Exchange (BX) to small ancillary facilities. AAFES facilities at Eglin AFB total approximately 179,300 square feet (ft<sup>2</sup>). The majority of this space is within the main BX, which also houses a food court and concessions (EAFB 2006).

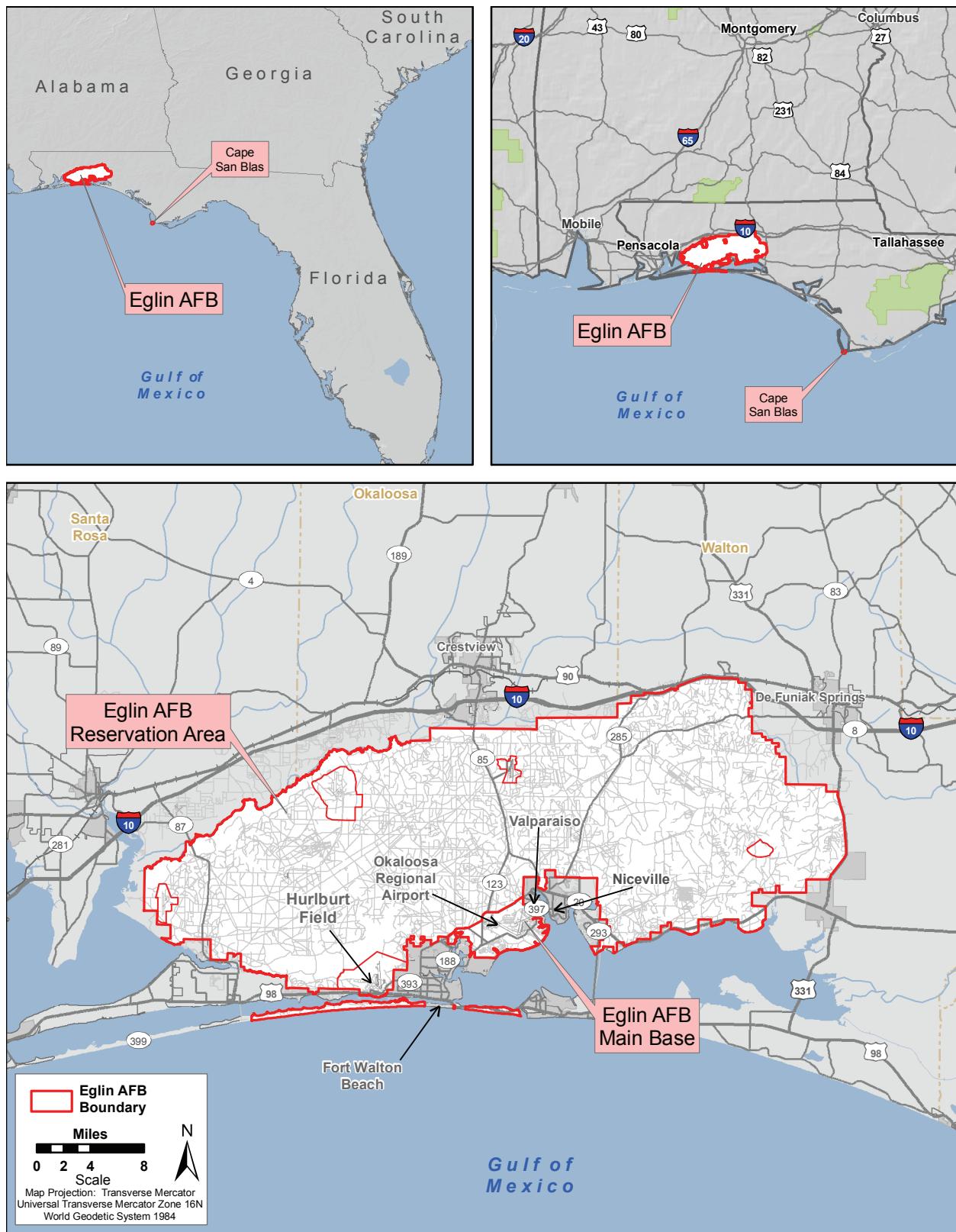
## 1.2 Purpose and Need

The purpose of the Proposed Action is to provide a modern sales, entertainment, and dining center at Eglin AFB for military personnel and their families. This mixed-use Lifestyle Center would offer the Eglin AFB community a modern one-stop destination with name-brand shops, eateries, and entertainment, such as a movie theater or bowling alley, in a town center-style development.

The current growth projections and the impact of Base Realignment and Closure (BRAC) on Eglin AFB indicate that over the next 5 years there will be an almost 12 percent increase in the number of AAFES customers. The Lifestyle Center is needed because the current facilities will be unable to provide the necessary levels of service and quality merited by AAFES customers. Expansion of the retail operations in both size and service variety is necessary to fit the growth and changing diversity of the customer base. Additionally, Eglin AFB is experiencing a shortage of administrative and storage space. By constructing the Lifestyle Center, approximately 130,000 ft<sup>2</sup> of existing space used for AAFES facilities on base could be reused as office or storage space.

## 1.3 Eglin AFB Location and Background

Eglin AFB is in the panhandle of northwestern Florida, comprising portions of Santa Rosa, Okaloosa, Walton, and Gulf counties (see **Figure 1-1**). One of the largest military installations in the DOD inventory, Eglin AFB comprises 724 square miles of land area. Eglin's "Main Base" occupies 10,500 acres (16 square miles) of the total land area, and is adjacent to Valparaiso, Florida, and 10 miles northeast of Fort Walton Beach, Florida. The flightline at the south-southwest edge of Eglin Main Base is used for military aircraft operations. Commercial flights operate out of Okaloosa Regional Airport, which is at the southwestern edge of the Main Base, and use Eglin AFB's runways. Hurlburt Field, home of the



**Figure 1-1. Eglin Air Force Base Location Map**

USAF Special Operations Command, is 5 miles west of Fort Walton Beach, Florida. Surrounding the Main Base area is the Eglin AFB Reservation Area, which provides adjacent lands for air-to-ground ranges and facilities for other activities associated with the test and evaluation of military equipment and munitions. The Main Base area and the Reservation Area are shown on **Figure 1-1**.

Eglin AFB is under the command of the Air Force Materiel Command (AFMC). Eglin AFB is a national asset, operated and maintained by the Air Armament Center (AAC). It serves several DOD components responsible for developing, testing, and operating weapons systems. Eglin AFB supports training activities for numerous military units, military schools, and various Federal agencies. The installation houses a USAF Research Lab and, because of its leading work in this important military sector, there are many technology-based and defense contracting firms within Okaloosa, Walton, and Santa Rosa counties, Florida. In fiscal year (FY) 2007, Eglin AFB accomplished the following:

- Created approximately 12,000 nonactive-duty jobs in the local community
- Had a \$1.7 billion impact on the local economy
- Directly employed approximately 13,800 military personnel and 8,500 civilians (appropriated and nonappropriated, contract civilians, and private business employees)
- Supported approximately 11,000 military family members
- Supported approximately 45,000 retired military members in the local community (EAFB 2007a).

In 2005, the Base Closure and Realignment Commission recommended specific military installation closures and asset realignment to streamline military operations. As a result of the 2005 Base Closure and Realignment Commission (BRAC) decisions, an additional 5,000 personnel and 7,000 family members are expected to be added to the local population at Eglin AFB by 2015 (EDCOC 2008).

## 1.4 Regulatory Compliance

### 1.4.1 National Environmental Policy Act

Under NEPA (1969), Federal agencies are required to assess the environmental consequences of their proposed actions systematically during the decisionmaking process. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions. The NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. The CEQ was established under NEPA to implement and oversee Federal policy in this process. In 1978, the CEQ issued regulations implementing the process (40 CFR Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*) and specified the following reasons to prepare an EA:

- Briefly provide evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI)
- Aid in an agency's compliance with NEPA when an EIS is unnecessary
- Facilitate preparation of an EIS when one is necessary.

The USAF has CEQ-approved implementing regulations for NEPA within Air Force Instruction (AFI) 32-7061, *Environmental Impact Analysis Process*, as set forth in 32 CFR Part 989, as amended.

## 1.4.2 Applicable Environmental and Regulatory Compliance

To comply with NEPA, the planning and decisionmaking process for Federal actions involves a study of relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of major environmental issues and requirements associated with a proposed action. According to CEQ regulations, the requirements of NEPA must be integrated “with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively.”

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. Through the analysis conducted in this EA, the Proposed Action and alternatives have been assessed to assure compliance with all applicable laws and regulations, such as the Clean Air Act (CAA); the Clean Water Act (CWA); the Endangered Species Act (ESA); the National Historic Preservation Act (NHPA); the Archaeological Resources Protection Act; the Solid Waste Disposal Act; and AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health Program*. **Appendix A** contains a representative listing and a more detailed description of laws, regulations, and Executive Orders (EOs) associated with various resource areas that might apply to the Proposed Action.

This EA analyzes the following 11 general impact topics: acoustical environment, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, traffic, utilities, and hazardous materials and wastes.

## 1.4.3 Applicable Permits and Approvals

**Appendix A** contains examples of relevant laws, regulations, and other requirements that are often considered part of the analysis. Only those laws, regulations, and other requirements that are relevant to the Proposed Action are included in **Appendix A**. In addition, various permits would be required for construction and operating activities. An EA is not a substitute for those permit requirements.

Air Force Form 103, *Base Civil Engineering Work Clearance Request*, is required under AFI 32-1031, *Operations Management*. The developer chosen to construct the proposed Lifestyle Center would be responsible for ensuring any necessary permits and approvals are in place prior to construction. Although precise permits are uncertain at the early stages of planning, the following permits and approvals would normally be required.

### Water-Related Permits

**Permits Associated with Construction Activities.** An Environmental Resource Permit (ERP) for construction storm water discharges would be required from the Northwest Florida Water Management District (NFWFMD). Best management practices (BMPs) would be required, and could include temporary sediment basins, sediment fencing, or revegetation for ground stabilization.

In addition to the ERP permit, a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges from large construction sites would be required through the Florida Department of Environmental Protection (FDEP).

If preconstruction surveys determine that waters of the United States occur on the proposed site that cannot be avoided, a permit under Section 404 of the CWA would be required prior to construction.

Surveys and jurisdictional determinations and delineations should be conducted in coordination with the U.S. Army Corps of Engineers (USACE).

**Permits Associated with Operational Activities.** Subsequent to completion of construction, the developer of the proposed Lifestyle Center would be required to file a transfer request form with the NFWFMD, transferring the ERP from a construction phase permit to an operational phase permit (refer to **Section 3.5.1**). The purpose of the operational phase ERP is to minimize potential flooding and contamination as a result of the increase in impervious surfaces. The ERP program would also require a permit for impacts on wetlands, although the wetlands ERP (Phase II of the ERP program) is expected to be in effect no sooner than January 2009.

In addition, the Lifestyle Center developer would need to coordinate with Eglin AFB and Okaloosa County to determine potential municipal separate storm sewer system (MS4) BMPs that might be required under the respective MS4 storm water management plans. Examples of MS4 BMPs can include construction storm water management, and post-construction practices such as installing storm water retention ponds or infiltration basins, periodic checks for illicit discharges (e.g., dumping used oil into parking lot gutter systems), and reviewing storm water management education materials from the respective MS4 permit holders (i.e., Eglin AFB and Okaloosa County).

A Consumptive Use Permit would be required from the NFWFMD for the drilling and use of water wells, including water used for irrigation or other consumption.

**Air-Related Permits.** A fugitive dust permit would be required because the area impacted by the Proposed Action or an alternative exceeds 25 acres. The Proposed Action and alternatives would be reviewed for a determination of whether potential new air emissions are within the limits of the Eglin AFB CAA Title V permit. Additionally, the Proposed Action and alternatives might require a determination of the applicability of New Source Review or Prevention of Significant Deterioration requirements under the CAA.

**Traffic-Related Permits.** Entrance requirements for the state highway system are set by Florida Department of Transportation (FDOT). A connection to the state highway system requires a Driveway Connection Permit and in some cases a Drainage Connection Permit. Any new intersections require a traffic signal warrant study under FDOT and design under FDOT and National Transportation Safety Board standards.

Florida statutes generally lay out the requirements for future access. The critical points are:

1. The State Highway Department has the discretion to grant or deny access permits.
2. The intent of the legislature is that such access is to be granted unless the permitting of such access connection would jeopardize the safety of the public or have a negative impact upon the operational characteristics of the highway.
3. The cost of entrance improvements (intersection improvements) would be borne by the proposed development.

**Hazardous Waste-Related Permits.** The net change in hazardous materials and wastes from the Lifestyle Center, if any, would not likely require a permit under RCRA. The Lifestyle Center developers would work with state regulators to manage all hazardous materials and wastes in accordance with state rules and regulations for Process Safety Management of Highly Hazardous Chemicals; Occupational Safety and Health Standards, Chemical Safety; Hazards Communication; and Fire Prevention.

## Approvals

Eglin AFB developed a Coastal Zone Management Act (CZMA) Consistency Determination for the Proposed Action. This Determination was sent to the Florida Clearinghouse for review and concurrence in accordance with the Florida Coastal Management Program. After review by applicable state agencies, the Florida Department of Environmental Protection (FDEP) replied that the proposed AAFES Lifestyle Center is consistent with the Florida Coastal Management Program (see **Appendix F**).

### 1.4.4 Interagency and Intergovernmental Coordination for Environmental Planning and Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. A premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process. CEQ regulations implementing NEPA specifically state, “There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping.” The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider territorial and local views when implementing a Federal proposal. AFI 32-7060 requires the USAF to implement a process known as *Interagency and Intergovernmental Coordination for Environmental Planning* (IICEP), which is used to facilitate agency coordination.

Eglin AFB notified relevant agencies about the Proposed Action and alternatives (see **Appendix B**) through the official Florida Clearinghouse process. The IICEP process provides Eglin AFB with the opportunity to cooperate with and consider other agencies’ views associated with implementing the Proposed Action or alternatives.

This EA was also made available for public review. A Notice of Availability (NOA) was published in the *Northwest Florida Daily News*, starting a 30-day public review and comment period. Copies of the Draft EA were sent to the local libraries listed in **Appendix B** for local review, and comments were solicited. Public and agency comments on the Draft EA are listed in **Appendix B** and have been taken into consideration in preparing the Final EA and FONSI.

## 1.5 Organization of this Document

This EA is organized into six sections plus appendices. **Section 1** provides the background information, and the purpose of and need for the Proposed Action. **Section 2** contains a detailed description of the Proposed Action and alternatives. **Section 3** provides a description of the affected environment and the potential environmental consequences of implementing the Proposed Action and alternatives. **Section 4** is a discussion of potential cumulative and other impacts. **Section 5** contains a list of references used in preparing the EA. **Section 6** contains a list of preparers of the EA. **Appendix A** includes a description of environmental laws, regulations, and EOs potentially applicable to the Proposed Action. **Appendix B** includes materials related to public involvement for the EA process, and will be expanded throughout the EA process. **Appendix C** contains photo documentation of the proposed site. **Appendix D** contains calculations to support the noise impact analysis. **Appendix E** contains calculations to support the air quality analysis. **Appendix F** contains the CZMA consistency determination, and the consistency response from the State of Florida Coastal Management Program. **Appendix G** contains calculations to support the traffic impact analysis. **Appendix H** contains documentation supporting a finding of no effect on Cultural Resources.

## 2. Description of Proposed Action and Alternatives

### 2.1 Introduction

As discussed in **Section 1.4.1**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, which are defined in **Section 1.2**. For this Proposed Action, AAFES could choose to construct the Lifestyle Center at a variety of available sites, and choose various configurations for site design to achieve the defined purpose and need. CEQ regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations.

### 2.2 Site-Selection Criteria

The proposed Lifestyle Center at Eglin AFB is one proposal of a larger AAFES Community Development Initiative, a pilot program to create contemporary retail developments that meet lifestyle needs on military installations (EAFB 2008a). After AAFES identified Eglin AFB as a candidate installation for a proposed Lifestyle Center based on BRAC and other growth projections, a list of site alternatives was presented to AAFES for initial screening. Selection criteria included the following:

- The site must be large enough to accommodate the proposed development
- Land use designations and noise issues at a potential site should be compatible with the proposed development
- The site should be located in a high-visibility area with ease of access from multiple points
- The site should be conveniently located relative to Eglin Main Base
- The site should be compatible with adjacent planned uses
- The site should present minimal environmental issues.

### 2.3 Proposed Action

AAFES proposes to construct a Lifestyle Center at Eglin AFB. The Lifestyle Center would be composed of two key facilities, one at each end of the development. Preliminary plans position the main BX at one end of the Lifestyle Center, and another major establishment, such as a first-run movie theater, at the other end. Between the two anchors would be a Main Street-style center featuring complementary name-brand retailers and tenants that are found in modern retail destination centers throughout the country such as name-brand apparel stores, book stores, sit-down restaurants and food courts, and various service tenants (REBusiness Online 2007). The Lifestyle Center would be designed as an architecturally pleasing one-stop destination for shopping, dining, and entertainment. It would be intended to appeal to and satisfy the needs of the modern military consumer. The proposed Lifestyle Center is anticipated to create approximately 850 new jobs in the local area (EAFB 2008a). A conceptual design and potential layouts of the proposed Lifestyle Center are presented in **Figure 2-1** through **Figure 2-4**.

The Lifestyle Center is proposed to be constructed on 100 acres of an approximate 200-acre parcel of the Eglin AFB Reservation Area. The proposed site is approximately 0.5 miles northwest of Eglin's West Gate. The proposed site is bounded by State Route (SR) 189 (Lewis Turner Boulevard) to the north, Sunset Lane to the south, Eglin Parkway/SR 85 to the east, and Poquito Road to the west. **Figure 2-5** presents an overview of the proposed site.



Figure 2-1. Conceptual Design of the AAFES Lifestyle Center

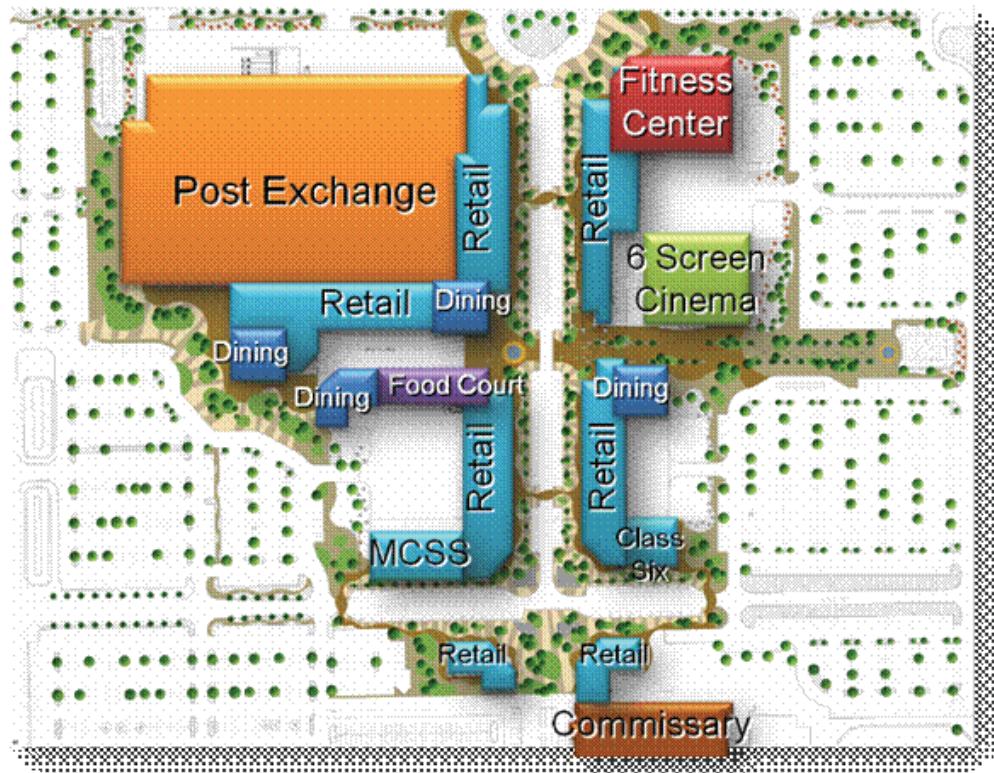


Figure 2-2. Potential Layout of the AAFES Lifestyle Center

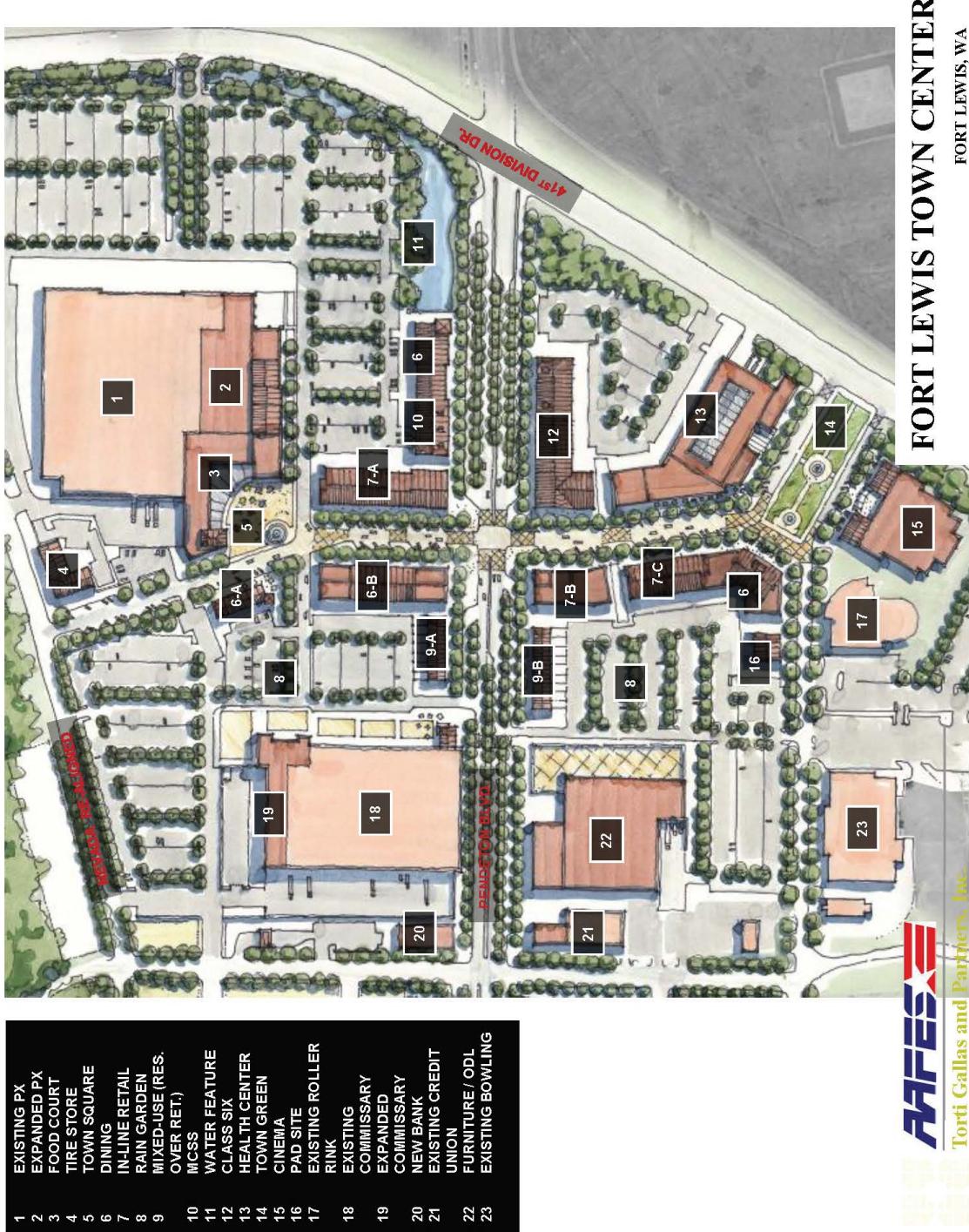
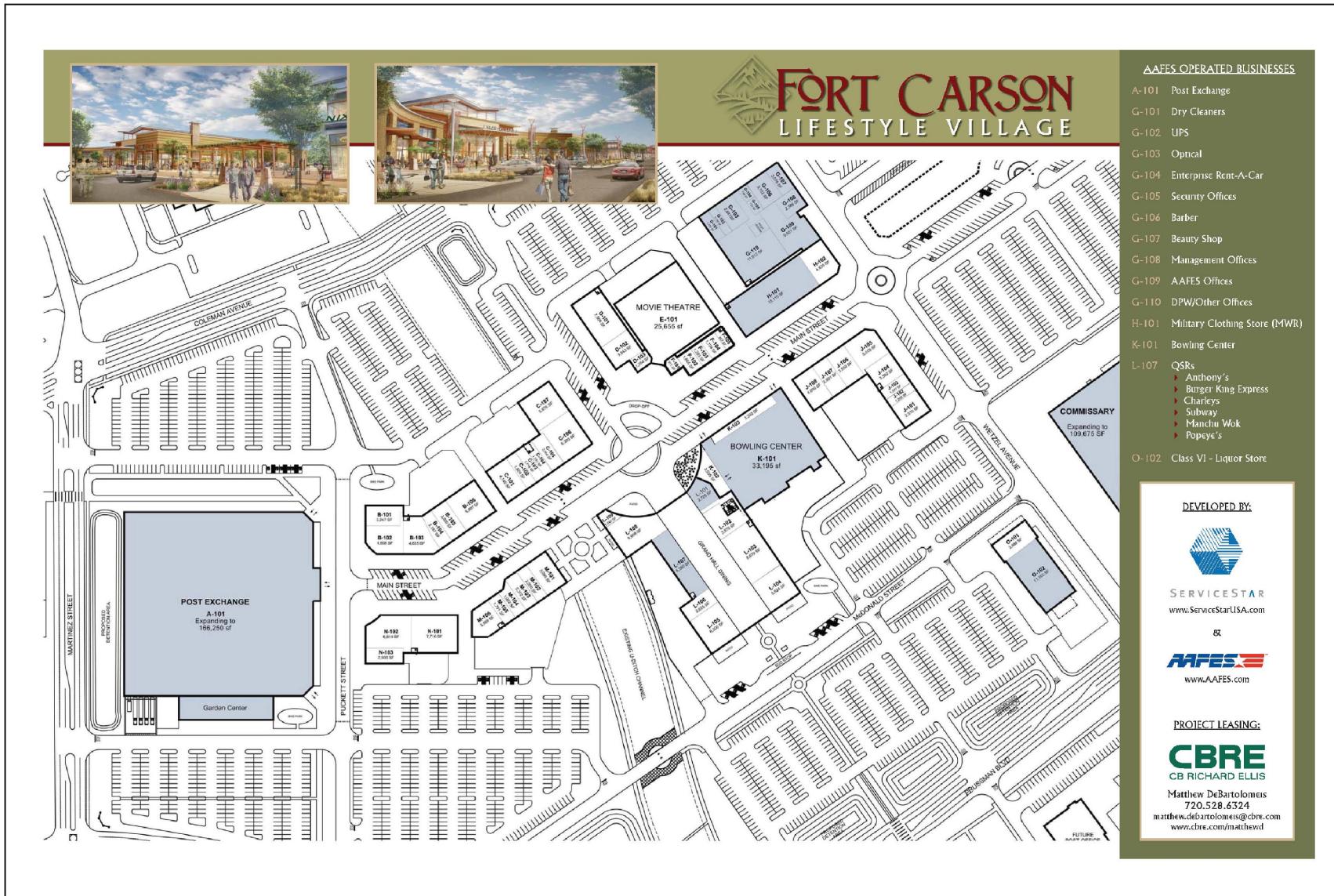


Figure 2-3. Example Layout for the AAFES Lifestyle Center from Fort Lewis

EA for an AAFES Lifestyle Center



**Figure 2-4. Example Layout for the AAFES Lifestyle Center from Fort Carson**

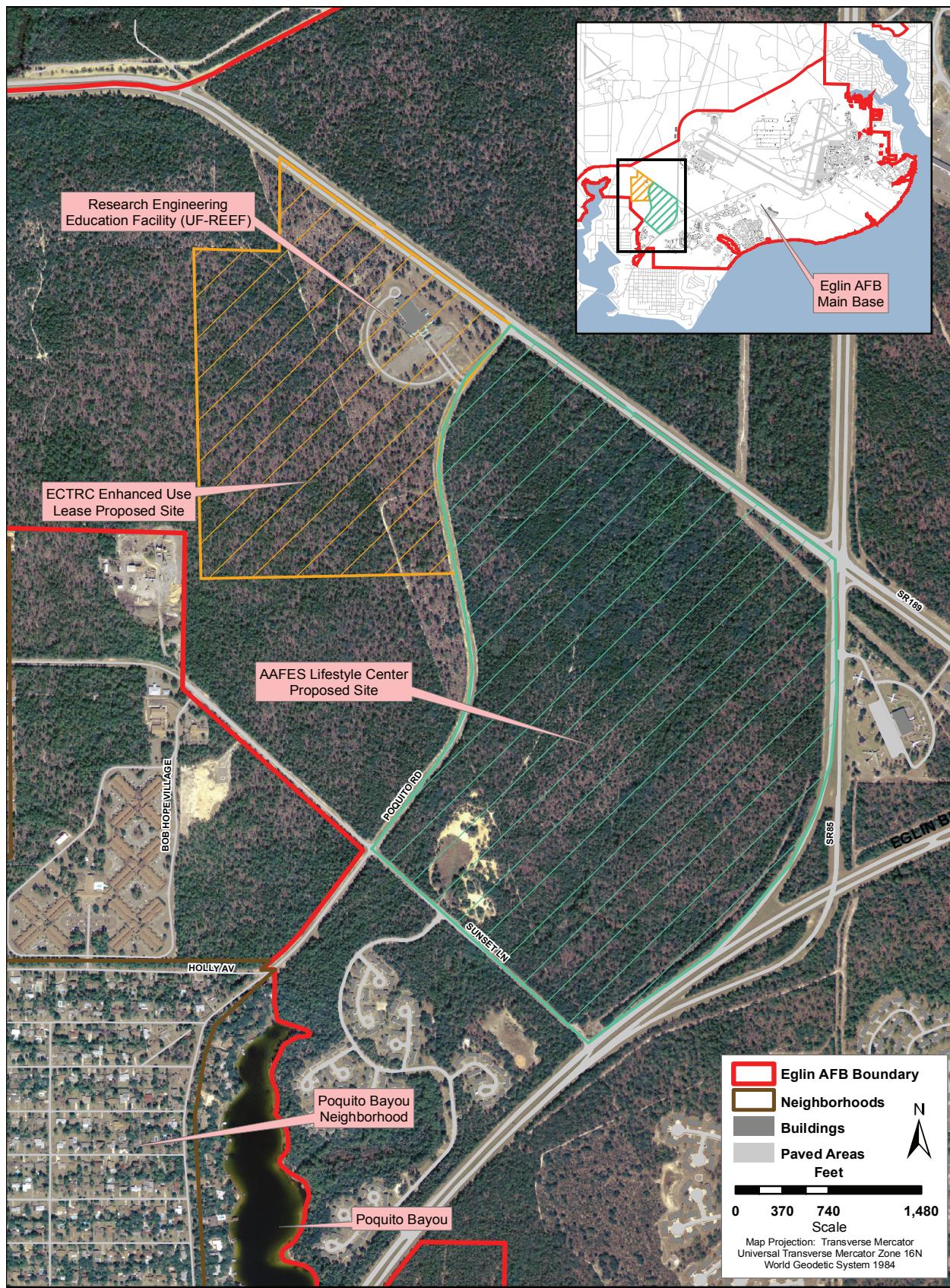


Figure 2-5. Proposed Site of the AAFES Lifestyle Center

The Proposed Action consists of constructing approximately 750,000 ft<sup>2</sup> of retail space in a town center-style configuration (see **Figures 2-2, 2-3, and 2-4**). Parking would be constructed on the outer perimeters of the Lifestyle Center at an industry standard of five spaces per 1,000 ft<sup>2</sup> of retail space, totaling approximately 3,750 parking spaces. Based on the number of spaces, the total parking lot size, including drive lanes and access roads, would be approximately 1,687,500 ft<sup>2</sup> (39 acres), based on an industry standard multiplier of 450 ft<sup>2</sup> per parking space<sup>1</sup>. In addition to the area taken up by retail space and parking, approximately 10 acres would be used for sidewalks, pathways, courtyards, walking zones, and other elements required to tie the Lifestyle Center together. Two child development centers (CDCs) consisting of one building each and a consolidated administrative facility are also planned to be integrated into the Lifestyle Center and would occupy 10 acres of the site. The balance of the 100-acre site, approximately 24 acres, would be used for landscaping or open green space, or other preservation needs.

The proposed Lifestyle Center would be constructed by private developers under a public-private venture scenario. A main component of the AAFES mission is to reinvest its earnings into replacement of aging facilities. Therefore, funding for the proposed project would come from earnings acquired through the operation of AAFES retail facilities. AAFES would enter into leases with desirable tenants, which would provide more flexibility than traditional concessions contracts. The public-private venture developer would be required to integrate green design wherever feasible through the use of energy and water efficient building techniques and equipment, the use of recycled materials, and the avoidance or enhancement of existing environmental features of the proposed site. Examples might include low-impact design storm water collection and treatment structures that integrate into the landscape and recycle water back to ground water; finding uses for recycled water such as fountains or irrigation systems; maintaining the maximum amount of open space feasible; surveying, marking, and retaining older, desirable trees on site such as the long leaf pine, where feasible; use of solar or other alternative energy sources; and use of green building design principles. Also, Eglin AFB would require the use of xeric landscape design throughout the proposed Lifestyle Center, and any deviation from this requirement would require written justification.

In order to reduce construction impacts, the developer would be required to coordinate construction staging with the planned Emerald Coast Technology and Research Center (ECTRC) construction project, which is proposed at a site directly west of the Lifestyle Center site (see **Figure 2-5**). Should the Proposed Action be implemented, some existing AAFES facilities on Eglin AFB would either close or be moved to the Lifestyle Center. The potential disposition of various AAFES facilities under the Proposed Action is presented in **Table 2-1**.

## 2.4 Alternatives

### 2.4.1 Preferred Alternative

Implementation of the Proposed Action as identified in **Section 2.3** is the Preferred Alternative.

### 2.4.2 Commissary Alternative

Under the Commissary Alternative, the base Commissary would move to the proposed Lifestyle Center. Under this alternative, an additional 100,000 ft<sup>2</sup> of retail space would be constructed at the proposed site. This additional space would also require an additional 500 parking spaces, which translates into an

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<sup>1</sup> A 450-ft<sup>2</sup> per parking space multiplier does not refer to the size of each parking space. Rather, this multiplier means that for every parking space planned at the Lifestyle Center there must be at least 450 ft<sup>2</sup> of parking lot total area. The multiplier is an average figure to account for total parking spaces, ingress and egress lanes, access roads, through lanes, turn lanes, and walkway space.

additional 225,000 ft<sup>2</sup> (5 acres) of pavement. Under this alternative, the larger Burger King (Building 1795) would relocate to the Lifestyle Center and the existing commissary space in Building 1755 on base would be reused as future administrative or storage space.

**Table 2-1. Disposition of Existing AAFES Facilities at Eglin AFB under the Proposed Action**

Facility	Current Location	Gross Area (ft <sup>2</sup> )	Disposition
Main BX	Building 1757	125,000	Move to Lifestyle Center. Current building on Eglin Main Base would be reused for administrative and storage space.
Food Court	Building 1757	8,000	Move to Lifestyle Center. Current building on Eglin Main Base would be reused for administrative and storage space.
Commissary	Building 1755	104,000	Remain in current location.
Concessionaires	Building 1757	10,000	Move to Lifestyle Center. Current building on Eglin Main Base would be reused for administrative and storage space.
Class Six	Building 1762	4,887	Move to Lifestyle Center. Current building on Eglin Main Base would be reused for administrative and storage space.
Day Spa/ Dry Cleaner	Building 1759	1,600	Move to Lifestyle Center. Current building on Eglin Main Base would be reused for administrative and storage space.
Burger King	Building 1765	4,648	Remain in current location.
West Gate Shoppette	Building 2587	4,500	Remain in current location.
Blimpie's	Building 2587	700	Remain in current location
East Gate Shoppette	Building 707	4,302	Remain in current location
Burger King	Building 707	200	Remain in current location
Mini Mall	Building 12	4,734	Since Military Clothing Store is moved to Lifestyle Center, additional space would allow for expansion of food court.
Mini Mall Food Court	Building 12	3,773	Remain in current location with expansion planned.
Car Care Center	Building 501	1,250	Remain in current location
Starbucks (Hospital)	Building 2825	500	Remain in current location

Source: EAFB 2006, EAFB 2008a, and Rostad 2008

### **2.4.3 No Action Alternative**

Under the No Action Alternative, AAFES would not construct a Lifestyle Center at Eglin AFB. Customers would continue to use the existing congested, undersized, and dispersed facilities. Continued need to use the inconvenient retail outlets on Eglin AFB would result in customer dissatisfaction and low morale. This could result in loss of revenue for the MWR fund for airmen.

### **2.4.4 Site Alternatives Eliminated from Detailed Analysis**

Besides the proposed site as identified in Section 2.3, AAFES initially studied two additional sites for their potential to accommodate the Proposed Action. Site 2 is located adjacent to the north side of the West Gate, and is bounded by SR 85 to the west, SR 189 to the south, and Eglin Boulevard, including the West Gate, to the east (see **Figure 2-6**). Site 2 was eliminated from further detailed analysis because of future noise conflicts that are anticipated upon arrival of the Joint Strike Fighter (JSF) aircraft. Additionally, construction on this site presents potential compatibility issues with planned expansion of the West Gate. Most traffic accessing this site would likely use the West Gate, therefore this alternative would exacerbate traffic issues. Site 3 is located within the base housing area. Site 3 was eliminated from detailed analysis due to potential JSF noise issues and the inaccessibility of the site by the general public.

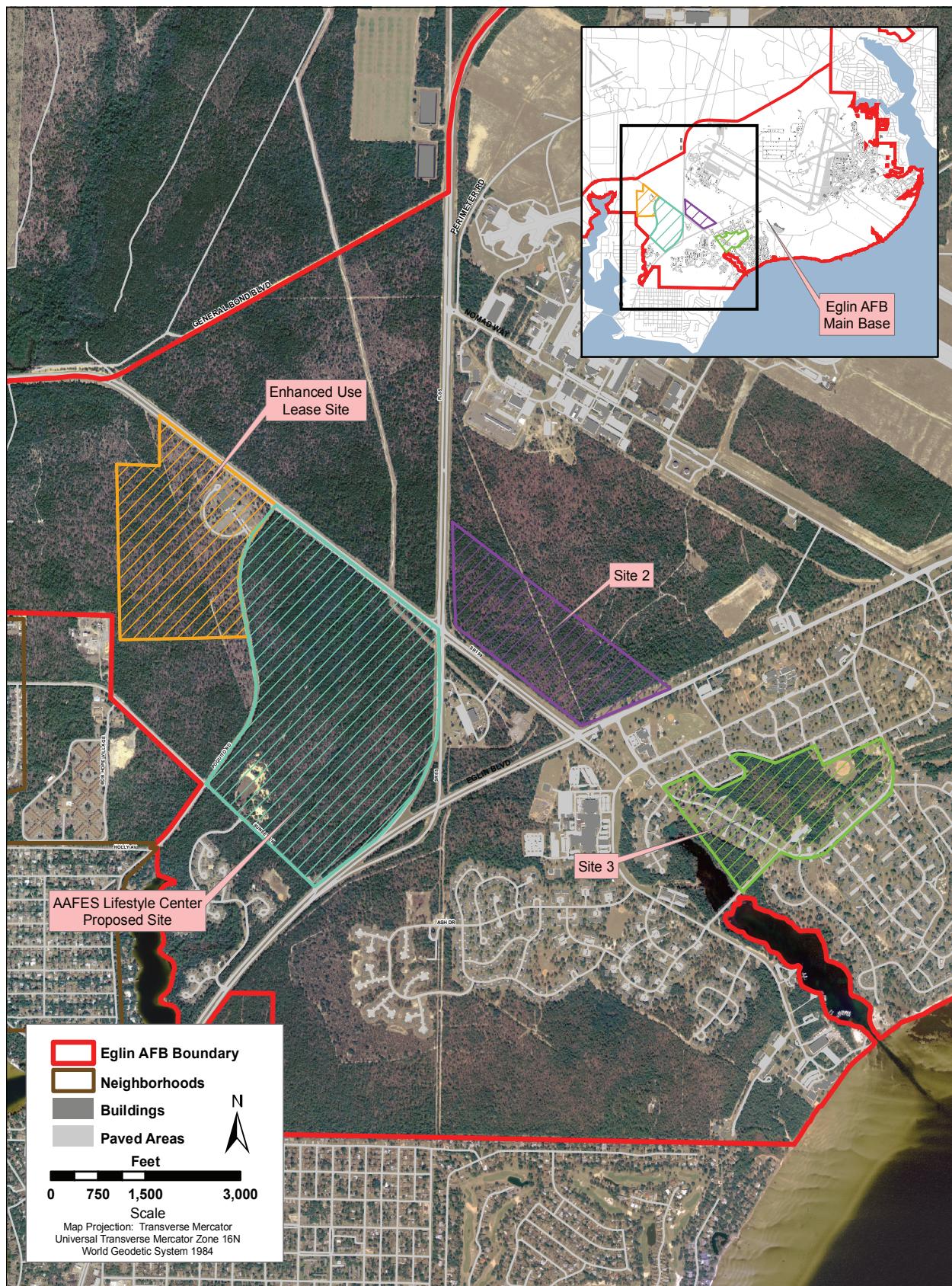


Figure 2-6. Site Alternatives Eliminated From Detailed Analysis

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### 3. Affected Environment and Environmental Consequences

#### 3.1 Acoustical Environment

##### 3.1.1 Definition of the Resource

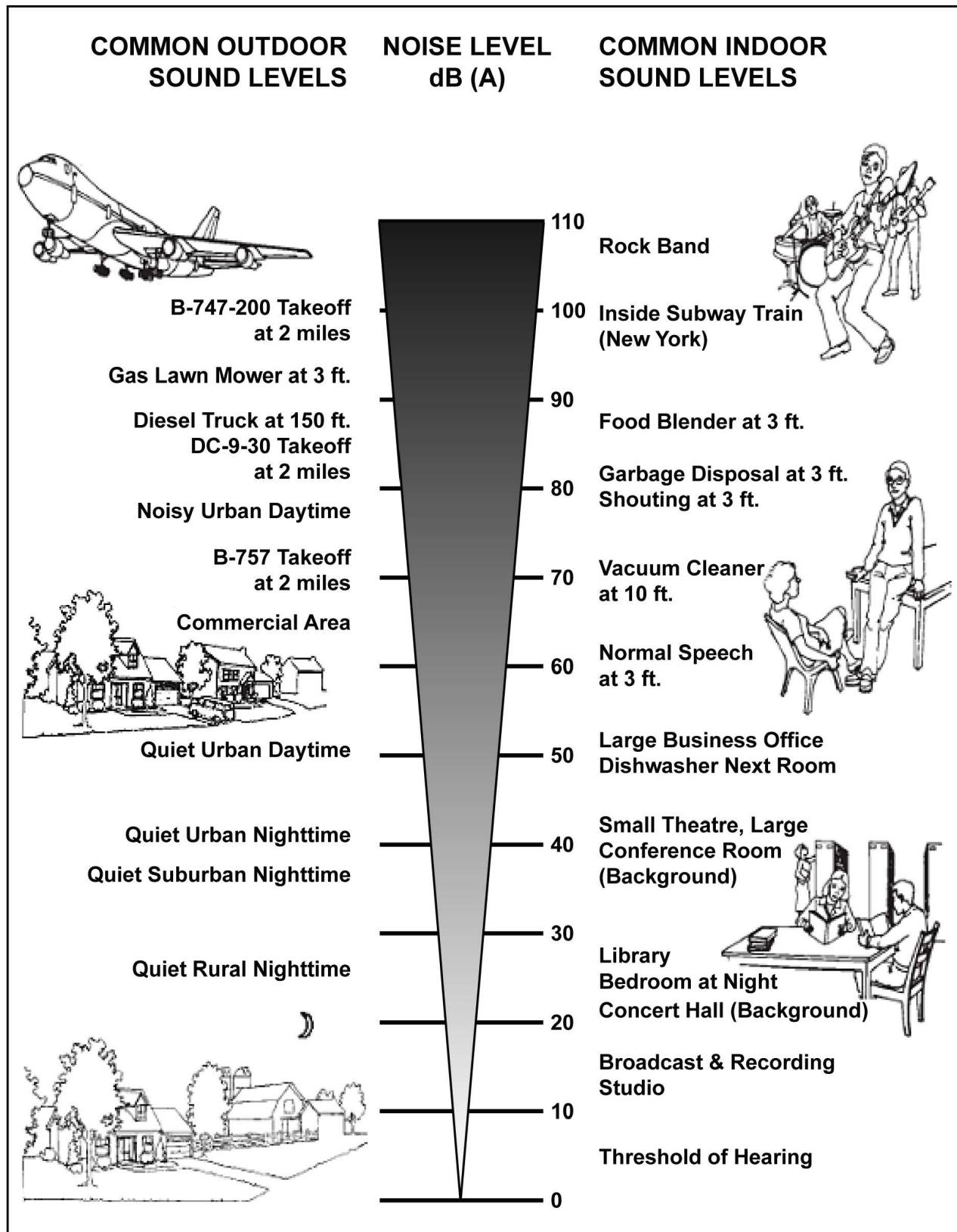
Sound is defined as a particular auditory effect produced by a given source, for example the sound of rain on the roof. Sound is measured with instruments that record instantaneous sound levels in decibels. A-weighted sound level measurements in decibels (dBA) are used to characterize sound levels that can be sensed by the human ear. “A-weighted” denotes the adjustment of the frequency content of a sound-producing event to represent the way in which the average human ear responds to the audible event. All sound levels analyzed in this EA are A-weighted.

Noise and sound share the same physical aspects, but noise is considered a disturbance while sound is defined as an auditory effect. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day. How an individual responds to the sound source will determine if the sound is viewed as music to one’s ears or as annoying noise. Affected receptors are specific (i.e., schools, churches, or hospitals) or broad areas (e.g., nature preserves or designated districts) in which occasional or persistent sensitivity to noise above ambient levels exists.

The Federal government has established noise guidelines and regulations for the purpose of protecting citizens from potential hearing damage and from various other adverse physiological, psychological, and social effects associated with noise. According to the USAF, the Federal Aviation Administration, and the U.S. Department of Housing and Urban Development criteria, residential units and other noise-sensitive land uses are “clearly unacceptable” in areas where the Day-Night Average A-weighted Sound Level (DNL) noise exposure exceeds 75 dBA, “normally unacceptable” in regions exposed to noise between 65 and 75 dBA, and “normally acceptable” in areas exposed to noise of 65 dBA or less. The Federal Interagency Committee on Noise developed land use compatibility guidelines for noise in terms of DNL (FICON 1992). For outdoor activities, the U.S. Environmental Protection Agency (USEPA) recommends a DNL of 55 dBA as the sound level below which there is no reason to suspect that the general population would be at risk from any of the effects of noise (USEPA 1974). DNL is the metric recognized by the U.S. government for measuring noise and its effects on humans.

**Ambient Sound Levels.** Noise levels in residential areas vary depending on the housing density and location. As shown in **Figure 3-1**, a quiet urban area in the daytime is about 50 dBA, which increases to 65 dBA for a commercial area and approximately 80 dBA for a noisy urban area in the daytime.

Most people are exposed to sound levels of 50 to 55 dBA or higher on a daily basis. Studies specifically conducted to determine noise effects on various human activities show that about 90 percent of the population is not significantly bothered by outdoor sound levels below a DNL of 65 dBA (USDOT 1984). Studies of community annoyance in response to numerous types of environmental noise show that DNL correlates well with effect assessments and that there is a consistent relationship between DNL and the level of annoyance.



Source: Landrum &amp; Brown 2002

Figure 3-1. Comparisons of Common Noise Levels

**Construction Sound Levels.** Clearing and grading activities as well as building construction can cause an increase in sound that is well above the ambient level. A variety of sounds come from graders, pavers, trucks, welders, and other work processes. **Table 3-1** lists sound levels associated with common types of construction equipment that could be used under the Preferred Alternative. Construction equipment usually exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 30 to 35 dBA in a quiet suburban area.

**Table 3-1. Predicted Noise Levels for Construction Equipment**

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)
<b>Clearing and Grading</b>	
Bulldozer	80
Grader	80–93
Truck	83–94
Roller	73–75
<b>Excavation</b>	
Backhoe	72–93
Jackhammer	81–98
<b>Building Construction</b>	
Concrete mixer	74–88
Welding generator	71–82
Pile driver	91–105
Crane	75–87
Paver	86–88

Source: USEPA 1971

### 3.1.2 Description of the Affected Environment

The ambient sound environment around the proposed site is affected mainly by vehicle traffic and aircraft operations. The noise from aircraft operations dominates over noise produced by vehicle traffic. Major transportation routes in the vicinity of the proposed site include SR 189, SR 85, Eglin Boulevard, Poquito Road, and Sunset Lane.

Aircraft operations at Eglin AFB (including Okaloosa Regional Airport) are the largest contributor to the noise environment around the installation. As discussed in **Section 3.1.1**, noise-sensitive land uses are “normally unacceptable” in areas that exceed a DNL of 65 dBA. Under the 2005 BRAC action, a JSF Initial Joint Training Site will be established at Eglin AFB (EAFB 2008b). This will result in an increase in aircraft operations at Eglin AFB. The DNL of 65–80+ dBA noise contours from aircraft operations at Eglin AFB were plotted on an aerial photograph (see **Figure 3-2**). These noise contours extend over Choctawhatchee Bay to the south, Eglin AFB to the north and northwest, and over the town of Valparaiso to the north. Additional airports in the vicinity of Eglin AFB include the Destin-Fort Walton Beach Airport, which is 7 miles southeast; Hurlburt Field, which is 10 miles west; and Eglin Auxiliary Field 3 (i.e., Duke Field), which is 12 miles north of Eglin AFB airfield. Operations from these airports contribute slightly to the acoustical environment around Eglin AFB.

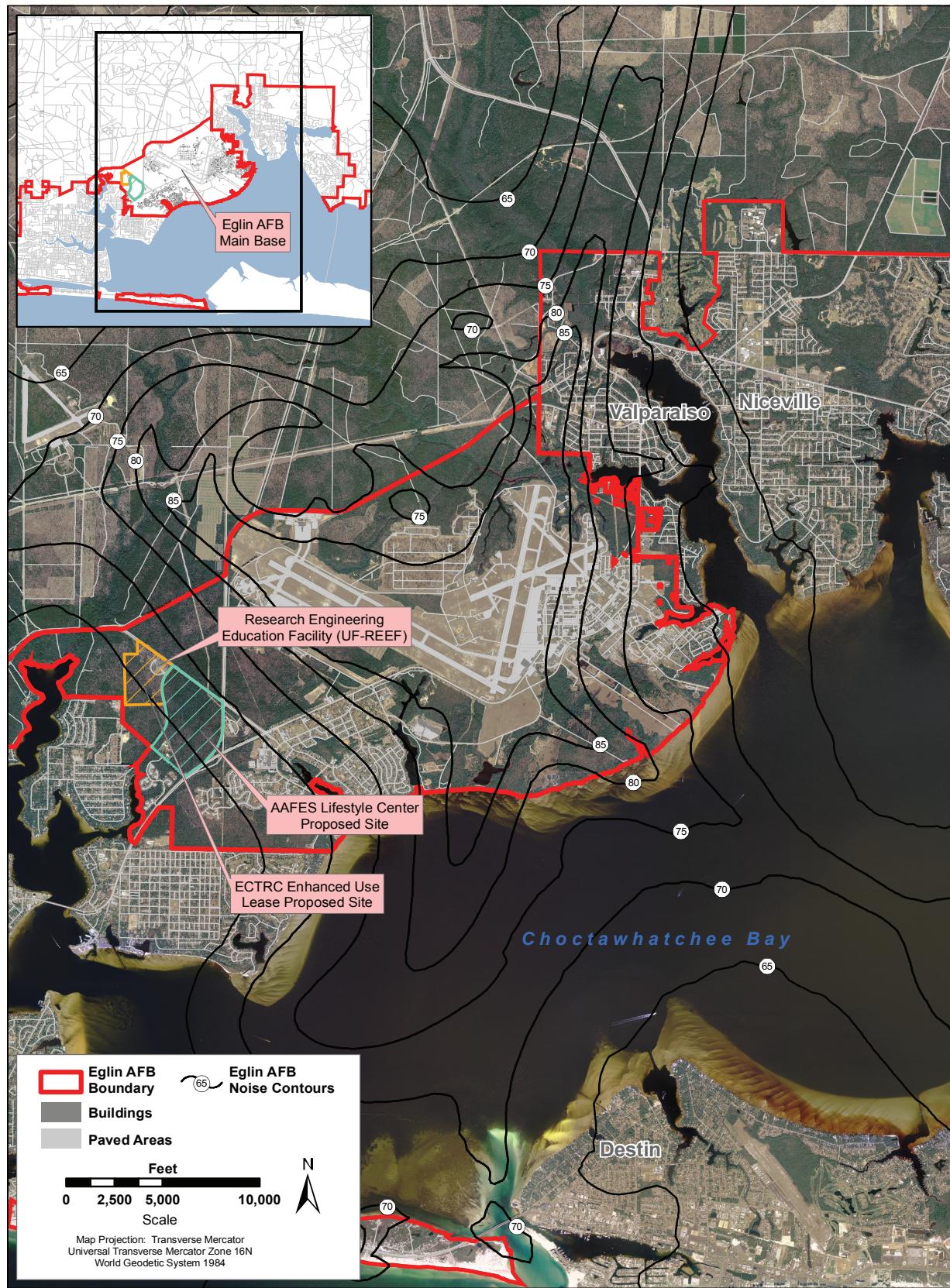


Figure 3-2. Eglin AFB Noise Contours

### 3.1.3 Environmental Consequences

#### Evaluation Criteria

An analysis of the potential impacts associated with noise typically evaluates potential changes to the existing acoustical environment that would result from implementation of a proposed action. Potential changes in the acoustical environment can be beneficial (i.e., they reduce the number of sensitive receptors exposed to unacceptable noise levels or reduce the ambient sound level), negligible (i.e., the total number of sensitive receptors to unacceptable noise levels is essentially unchanged), or adverse (i.e., they result in increased sound exposure to unacceptable noise levels or ultimately increase the ambient sound level). Projected noise effects were evaluated qualitatively for the alternatives considered.

#### Preferred Alternative

Under the Preferred Alternative, an increase in noise levels could originate from construction equipment, vehicular traffic, and aircraft operations.

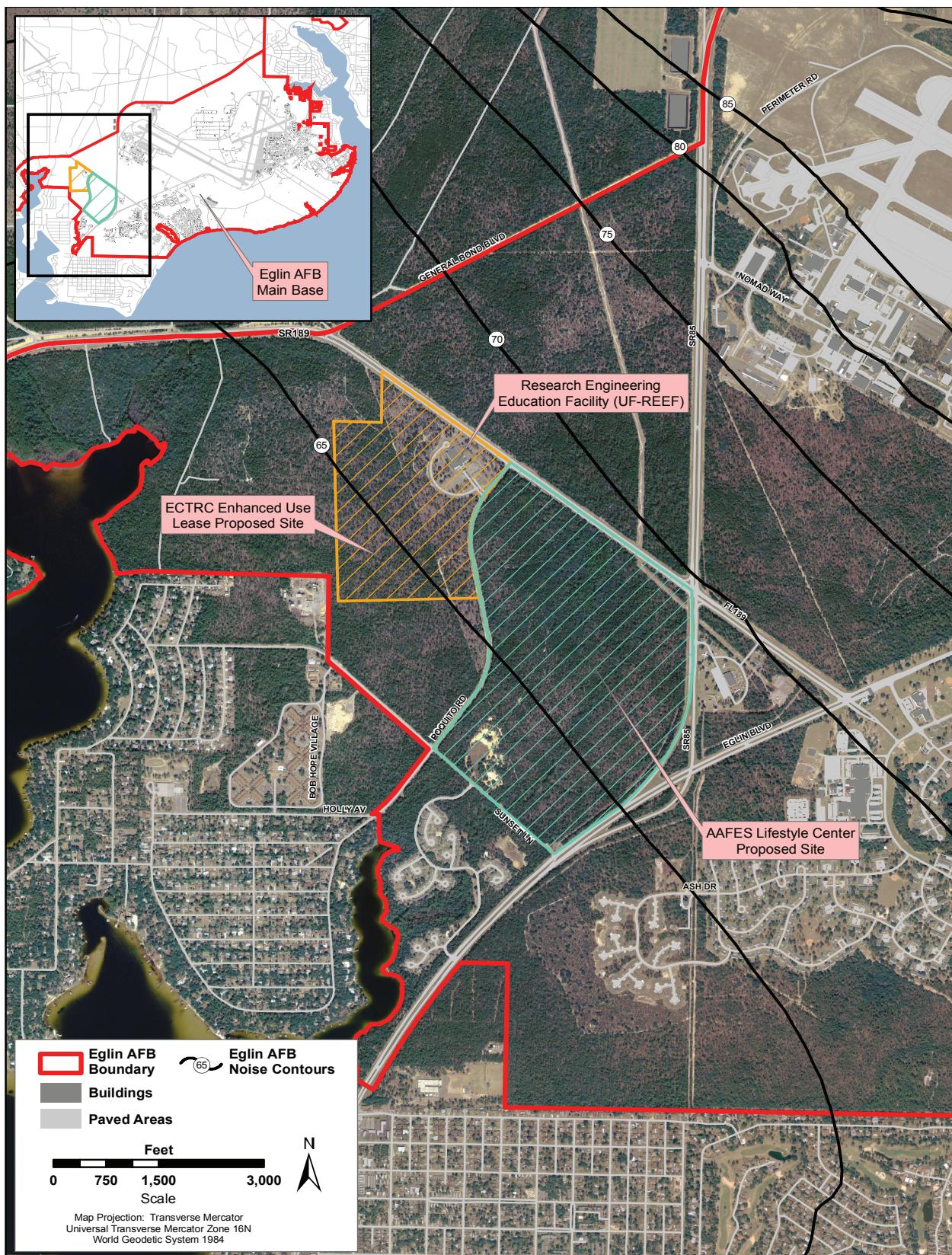
**Construction Noise.** Short-term minor adverse effects are anticipated as a result of construction activities under the Preferred Alternative. The construction projects include clearing, grading, paving, and building construction activities.

Examples of expected construction noise during daytime hours at the Preferred Alternative are as follows:

- The closest residents would be approximately 700 feet south of construction activities on Sweet Bay Circle. Populations would experience noise levels of approximately 66 dBA from construction activities.
- Residents approximately 950 feet southeast of construction on Ash Drive would experience noise levels of approximately 63 dBA from construction activities.
- Residents in the northeastern corner of the Poquito Bayou neighborhood, approximately 1,600 feet southwest from the construction site, would experience noise levels of approximately 58 dBA from construction activities.

Implementation of the Preferred Alternative would have short-term minor adverse effects on the acoustical environment from the use of heavy equipment during construction activities. Noise generation would last only for the duration of construction activities (18 months) and would be isolated to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Noise effects from increased traffic due to construction vehicles would also be temporary in nature.

**Vehicular Noise.** Long-term minor adverse effects are anticipated as a result of vehicular traffic under the Preferred Alternative. Construction, civilian, and military traffic entering the proposed site could use SR 189, SR 85, Eglin Boulevard, or Poquito Road. SR 189 and Eglin Boulevard are heavily used; consequently, the additional traffic would likely cause minor increases in noise levels for noise-sensitive populations on those roadways. The increase in traffic under the Preferred Alternative would likely occur on SR 189 and Eglin Boulevard. However, additional traffic could travel on SR 85, Poquito Road, and Sunset Lane. These roadways are not as heavily traveled as SR 189 and Eglin Boulevard, and there are a greater number of homes adjacent to the roads. These homes are shown in **Figure 3-3**, and are located within several cul-de-sacs accessed via Loblolly Drive south of Sunset Lane at the southern end of the proposed site, as well as within the Poquito Bayou neighborhood that can be accessed via Poquito Road. Consequently, additional traffic on SR 85, Poquito Road, and Sunset Lane could cause long-term minor adverse effects on noise-sensitive populations.



Source of Base Data: Eglin AFB

**Figure 3-3. Noise Contours in Relation to the Proposed Site**

**Aircraft Noise.** At this time, Eglin AFB has not made any decisions regarding JSF beddown alternatives. Therefore, there remains a possibility that the footprints of the DNL of 65-80+ dBA contours, as presented in Figure 3-2 and Figure 3-3, could fluctuate. AAFES is aware of this and will revise noise impact analyses pending final decisions on JSF beddown alternatives.

The majority of land at the proposed site is within the DNL of 65–70 dBA noise levels from aircraft operations at Eglin AFB (see **Figure 3-3**). The southwestern edge of the site is outside of the 65 dBA noise level and the northeastern section of the site is within the 65–70 dBA noise level. Noise levels would be highest at the northeastern section of the site, adjacent to SR 189, and lowest at the southwestern section of the site. Land use compatibility with respect to construction of the AAFES Lifestyle Center at the Preferred Alternative is discussed in **Section 3.2.2**. Potential noise impacts on fauna are discussed in **Section 3.6.3**.

### **Commissary Alternative**

Short-term minor adverse effects are anticipated as a result of construction activities under the Commissary Alternative. With the construction of an additional 100,000 ft<sup>2</sup> of space, the Commissary Alternative would compose 53 percent of the proposed site, whereas the Preferred Alternative would compose 50 percent. Due to the minor increase (3 percent) in the amount of total land to be cleared and graded as compared to the Preferred Alternative, in addition to construction of additional parking and walkway area, additional equipment could be required. Therefore, noise levels could be slightly higher at noise-sensitive receptors under the Commissary Alternative as compared to the Preferred Alternative.

### **No Action Alternative**

Under the No Action Alternative, the AAFES Lifestyle Center would not be constructed. The affected environment described in **Section 3.1.2** would remain unchanged. No adverse effects on the ambient noise environment would occur under the No Action Alternative.

## **3.2 Land Use**

### **3.2.1 Definition of the Resource**

The term “land use” refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a parcel. In many cases, land use descriptions are codified in local zoning laws. There is, however, no nationally recognized convention or uniform terminology for describing land use categories. As a result, the meanings of various land use descriptions, “labels,” and definitions vary among jurisdictions.

Natural conditions of property can be described or categorized as unimproved, undeveloped, conservation or preservation area, and natural or scenic area. There is a wide variety of land use categories resulting from human activity. Descriptive terms often used include residential, commercial, industrial, agricultural, institutional, and recreational.

Two main objectives of land use planning are to ensure orderly growth and compatible uses among adjacent property parcels or areas. Compatibility among land uses fosters the societal interest of obtaining the highest and best uses of real property. Tools supporting land use planning include written master plans/management plans and zoning regulations. In appropriate cases, the locations and extent of proposed actions need to be evaluated for their potential effects on project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with any applicable land use or zoning regulations. Other relevant factors include matters such as existing land use at the

project site, the types of land uses on adjacent properties and their proximity to a proposed action, the duration of a proposed activity, and its “permanence.”

### **3.2.2 Description of the Affected Environment**

Eglin AFB is on the panhandle of northwestern Florida in Okaloosa County, southwest of the City of Valparaiso. The Cities of Fort Walton Beach, Destin, and Niceville; and the Town of Shalimar are all within 7 miles of Eglin AFB. The Choctawhatchee National Forest surrounds Eglin AFB to the north and east, with the Choctawhatchee Bay to the south. Most of the developed land around Eglin AFB consists of property in the Cities of Valparaiso and Niceville (to the northeast), which includes primarily residential, commercial, and some industrial uses. To the south and southwest of Eglin AFB in Shalimar and Fort Walton, land consists mostly of residential and commercial use. The Town of Shalimar is one of the fastest growing municipalities outside of Eglin AFB; this development has caused pressure on Eglin AFB for the use of its land resources. For example, if land is developed adjacent to Tom’s Bayou on either side of Eglin Boulevard, it could be difficult for Eglin AFB to acquire this land in the future and might impact development capabilities. As a result, a Mission Enhancement Committee has been established to explore land acquisition opportunities that might benefit Eglin AFB in the future (AAC undated). In addition, a Joint Land Use Study between Eglin AFB and surrounding Okaloosa, Santa Rosa, and Walton counties is expected to be completed by August 2008 (Okaloosa County undated a). The Joint Land Use Study aims to provide guidelines for complementary growth management and land use compatibility with Eglin AFB and surrounding communities.

The proposed site is currently an undeveloped, wooded lot. Surrounding land uses include residential, commercial, and open space. Except for the southwestern corner, all of the property surrounding the proposed site is owned by Eglin AFB. The Poquito Bayou neighborhood in the Town of Shalimar is less than 1 mile southwest of the proposed site. The site sits approximately 1.7 miles from the Eglin Airfield. The Emerald Coast Technology and Research Campus (ECTRC) is scheduled for construction at the Enhanced Use Lease site adjacent to the western boundary of the proposed site.

Area of Concern (AOC) 54 is located in the southeastern corner of the proposed site, between Sunset Lane and SR 85. This site is a third-party Installation Restoration Program site, meaning that it had been contaminated and is in the process of clean-up. Please see **Section 3.5.2** for a discussion on AOC-54. This land is leased to Gulf Power as a power substation site. Additionally, Gulf Power possesses an easement underneath existing power lines through the site.

The CZMA of 1972 (16 United States Code [U.S.C.] 1451 et seq.) declares a national policy to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation’s coastal zones. Federal activities that have reasonably foreseeable effects on any land, water, or natural resources of the coastal zone must be consistent to the maximum extent practicable with the enforceable policies of a state’s federally approved coastal zone management program in order to achieve Federal consistency with CZMA requirements. The Florida Coastal Management Program, which is administered through the Florida State Clearinghouse and overseen by the FDEP, is a federally approved program that ensures the compatible use of Florida’s coastal resources (FDEP 2006a). Please see **Appendix F** for the Consistency Determination.

### **3.2.3 Environmental Consequences**

#### **Evaluation Criteria**

An analysis of the effects on land use addresses the potential for impacts on residential communities to occur, as well as the potential for buildings and other obstructions to intrude into safeguarded airspace.

New construction should be compatible with current land use guidelines. Land use can remain compatible, become compatible, or become incompatible. Projected compatibility issues were measured both qualitatively and quantitatively. The level of potential land use effects is based on the degree of land use sensitivity in areas affected by a proposed action and compatibility of proposed actions with existing conditions. In general, a land use effect would be adverse if it met any of the following criteria:

- Was inconsistent or in noncompliance with existing land use plans or policies
- Precluded the viability of existing land use
- Precluded continued use or occupation of an area
- Was incompatible with adjacent land use to the extent that public health or safety is threatened
- Conflicted with planning criteria established to ensure the safety and protection of human life and property
- Was inconsistent with a state's coastal zone management program and adverse effects could not be resolved through coordination with the state.

According to the Air Force Handbook 32-7084, *Air Installation Compatibility Use Zone Program Manager's Guide*, land use compatibility varies depending on the intended use of the area and the noise level (see **Table 3-2**).

**Table 3-2. Land Use Compatibility**

Land Use	Noise Zones			
	65–69 dBA	70–74 dBA	75–79 dBA	80+ dBA
Entertainment Assembly (including Movie Theaters)	A	B	N	N
Business or Professional Services	Y	A	B	N
Educational Services (including Day Care Facilities)	A*	B*	N	N
Retail Trade (Commercial Facilities including Restaurants)	Y	A	B	N

Source: AFH 32-7084 1999

Notes:

Y – (Yes) – Land uses and related structures are compatible without restriction.

N – (No) – Land use and related structures are not compatible and should be prohibited.

A, or B – Land use and related structures generally compatible; measures to achieve Noise Level Reduction for A (65–69 dBA), B (70–74 dBA), need to be incorporated into the design and construction of structures.

A\* and B\* – Land use generally compatible with Noise Level Reduction; however, measures to achieve an overall noise level reduction do not necessarily solve noise issues and additional evaluation is warranted. See appropriate notes below.

\* – The designation of these uses as "compatible" in this zone reflects individual Federal agencies and program considerations of general cost and feasibility factors, as well as past community experiences and program objectives. Localities, when evaluating the application of these guidelines to specific situations, might have different concerns or goals to consider.

## Preferred Alternative

Minor adverse effects would be anticipated with the construction of the Preferred Alternative.

According to the *General Plan Eglin AFB Main Base and Duke Field* (AAC undated), current land use for this site is designated as open space and future land use is administrative. This would be compatible with the Preferred Alternative. However, as surrounding land use on- and off-installation is composed of

residential uses, adjacent populations could experience long-term impacts from noise and activities associated with the AAFES Lifestyle Center. The Preferred Alternative would result in temporary minor adverse impacts due to an increased presence of construction vehicles and disturbances related to construction activities.

As shown in **Figure 3-2**, the proposed site and surrounding populations could be affected by noise levels at or above a DNL value of 65 dBA from aircraft operations at Eglin AFB. The highest noise levels occur at the northeastern end of the site and are above 65 dBA. The lowest noise levels, at the southwestern end of the site, are below 65 dBA.

Most of the AAFES Lifestyle Center would be located in the 65 dBA noise zone. Land use for the AAFES Lifestyle Center would likely include commercial facilities, restaurants, a movie theater, and two CDCs. As shown in **Table 3-2**, commercial facilities and restaurants are compatible in the 65 to 69 dBA noise zone. Movie theaters and the two CDCs are generally compatible; however, noise level reduction measures need to be incorporated into the design and construction of structures. The two CDCs are proposed outside of the 65 to 69 dBA noise zone; therefore, the two CDCs would be considered a compatible land use.

To the west of the proposed site is a planned enhanced use lease site that will be developed into a full research campus (EAFB 2008a). Enhanced use leases are leases between the USAF and public or private developments. Enhanced use leases are encouraged by the Military Leasing Act, as amended, to expand leasing opportunities and must be compatible with adjacent USAF land uses (AFRPA 2006a). The proposed Lifestyle Center and the adjacent proposed enhanced use lease research campus would be mutually compatible and, more likely, mutually beneficial as the Lifestyle Center could provide convenient retail outlets and services to students and faculty of the research campus. The Preferred Alternative would not preclude the viability of existing adjacent land uses or future plans because it is compatible with the land use on the current site and is consistent with the planned future land uses as outlined in the *Base General Plan, Eglin AFB Main Base and Duke Field* (AAC undated).

Eglin AFB has imposed height restrictions of 100 feet above ground level for construction on and adjacent to the installation. Therefore, all of the proposed facilities would need to be constructed at a height lower than 100 feet above ground level.

Transportation impacts are discussed in **Section 3.9**. Although traffic congestion and delays could occur during rush hours, it is not anticipated that the Preferred Alternative would adversely impact the viability of the existing land use.

Eglin AFB has prepared a consistency determination under the CZMA to determine if the Preferred Alternative would be consistent with the enforceable policies of the Florida Coastal Management Program (see **Appendix F**). The CZMA consistency determination was reviewed through the Florida Coastal Management Program, and the review response is included in **Appendix F**.

## **Commissary Alternative**

The environmental consequences for the Commissary Alternative would be expected to be similar to those of the Preferred Alternative. The Commissary Alternative would require additional land to construct the new installation Commissary and parking area. These new structures would be located within the 65 dBA noise zone, and would be compatible with surrounding land use.

## No Action Alternative

The No Action Alternative would result in continuation of the existing condition. The affected environment would remain essentially unchanged from what was described in **Section 3.2.2**. No effects on land use would be expected.

## 3.3 Air Quality

### 3.3.1 Definition of the Resource

In accordance with Federal CAA requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological “air basin,” and the prevailing meteorological conditions.

Under the CAA, USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone ( $O_3$ )—measured as either volatile organic compounds (VOCs) or total nitrogen oxides ( $NO_x$ ), carbon monoxide (CO), nitrogen dioxide ( $NO_2$ ), sulfur oxides ( $SO_x$ ), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [ $PM_{10}$ ]) and particulate matter equal to or less than 2.5 microns in diameter [ $PM_{2.5}$ ]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. Florida has adopted the NAAQS except for sulfur dioxide ( $SO_2$ ) (Florida Administrative Code [F.A.C.] 62-204-240). **Table 3-3** presents the USEPA NAAQS and Florida Ambient Air Quality Standards.

USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either “attainment,” “nonattainment,” “maintenance,” or “unclassified” for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS to the FDEP, Division of Air Resource Management. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be “significant” if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of  $1 \mu\text{g}/\text{m}^3$  or more

**Table 3-3. National and State Ambient Air Quality Standards**

<b>Pollutant</b>	<b>Standard Value</b>		<b>Standard Type</b>
	<b>Federal</b>	<b>State</b>	
<b>CO</b>			
8-hour Average <sup>a</sup>	9 ppm (10 mg/m <sup>3</sup> )	Same	Primary
1-hour Average <sup>a</sup>	35 ppm (40 mg/m <sup>3</sup> )	Same	Primary
<b>NO<sub>2</sub></b>			
Annual Arithmetic Mean	0.053 ppm (100 µg/m <sup>3</sup> )	Same	Primary and Secondary
<b>O<sub>3</sub></b>			
8-hour Average <sup>b</sup>	0.075 ppm	--	Primary and Secondary
1-hour Average <sup>c</sup>	--	0.12 ppm (235 µg/m <sup>3</sup> )	Primary and Secondary
<b>Pb</b>			
Quarterly Average	1.5 µg/m <sup>3</sup>	Same	Primary and Secondary
<b>PM<sub>10</sub></b>			
Annual Arithmetic Mean	--	50 µg/m <sup>3</sup>	
24-hour Average	150 µg/m <sup>3</sup> <sup>d</sup>	Same <sup>a</sup>	Primary and Secondary
<b>PM<sub>2.5</sub></b>			
Annual Arithmetic Mean <sup>e</sup>	15 µg/m <sup>3</sup>	--	Primary and Secondary
24-hour Average <sup>f</sup>	35 µg/m <sup>3</sup>	--	Primary and Secondary
<b>SO<sub>2</sub></b>			
Annual Arithmetic Mean	0.03 ppm	0.02 ppm	Primary
24-hour Average <sup>a</sup>	0.14 ppm	0.1 ppm	Primary
3-hour Average <sup>a</sup>	0.5 ppm (1,300 µg/m <sup>3</sup> )	Same	Secondary

Sources: USEPA 2008a and F.A.C. 62-204.240

Notes:

Parenthetical values are approximate equivalent concentrations.

ppm = parts per million

mg/m<sup>3</sup> = milligrams per cubic meterµg/m<sup>3</sup> = micrograms per cubic meter<sup>a</sup> Not to be exceeded more than once per year.<sup>b</sup> To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This standard is effective on May 27, 2008, and replaces the 1997 8-hour ozone standard of 0.08 ppm. However, the 1997 standard and its implementing rules remain in effect while USEPA undergoes rulemaking to transition to the 2008 standard.<sup>c</sup> As of June 15, 2005, USEPA revoked the Federal 1-hour ozone standard in all areas except the 14 8-hour ozone nonattainment Early Action Compact Areas. The Florida 1-hour ozone standard has not been revoked.<sup>d</sup> Not to be exceeded more than once per year on average over 3 years.<sup>e</sup> To attain this standard, the 3-year average of the weighted annual mean PM<sub>2.5</sub> concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m<sup>3</sup>.<sup>f</sup> To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m<sup>3</sup>. This standard is effective December 17, 2006.

(40 CFR 52.21(b)(23)(iii)). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR 52.21(c)).

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source has the potential to emit more than 100 tons per year (tpy) of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their effect on air quality. Section 112 of the CAA defines the sources and kinds of HAPs.

### 3.3.2 Description of the Affected Environment

The proposed site is in Okaloosa County, Florida, which is part of the Mobile (Alabama)-Pensacola-Panama City (Florida)-Southern Mississippi Interstate (MPPCSMI) AQCR (40 CFR 81.68). The MPPCSMI AQCR is classified as in attainment for all criteria pollutants (USEPA 2008b). Most areas of Florida, including Eglin AFB, are designated as Class II areas, which are areas where moderate well-controlled industrial growth is allowed. There are no Class I areas within 10 kilometers of Eglin AFB or the proposed site (USFWS 1998). The emissions inventories for Okaloosa County and the MPPCSMI AQCR are shown in **Table 3-4**. Okaloosa County is considered the local area of influence, and the MPPCSMI AQCR is considered the regional area of influence for the air quality analysis.

**Table 3-4. Local and Regional Air Emissions Inventories**

	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
Okaloosa County, Florida	8,479	19,494	148,737	686	14,231	10,133
MPPCSMI AQCR	393,757	312,693	1,842,763	384,685	336,542	137,700

Source: USEPA 2001

Eglin AFB is classified as a major source and has been issued a Title V Operation Permit (0910031-009-AV), which is scheduled for renewal on 14 June 2009 (USAF 2004). Hurlburt Field is not included in the Title V permit. There are various stationary combustion sources on the installation that have the potential to emit criteria pollutants and HAPs, including the installation's boilers and generators. VOCs are emitted primarily from handling of organic liquids (i.e., refueling activities). Miscellaneous particulate matter sources at Eglin AFB include abrasive blasting units, and woodworking equipment (USAF 2004). Other stationary sources at Eglin AFB include paint booths, wash racks, and a dry cleaning facility.

Every year, Eglin AFB is required to prepare and submit an emissions inventory to the FDEP. The purpose of this annual emissions inventory is to estimate and document air pollutant emissions from stationary sources. There is no routine requirement to calculate pollutant emissions calculations for aircraft operations, government-owned vehicles, privately owned vehicles, aircraft engine testing, aerospace ground equipment, and other sources not included in the state's stationary source permitting program. **Table 3-5** summarizes the annual air emissions and the Title V potential to emit values.

**Table 3-5. Reported Air Emissions and Potential to Emit Values for Eglin AFB**

	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM (tpy)	HAP (tpy)
2004 Actual Emissions	124.55	101.65	83.50	5.76	198.45	9.93
Permitted Potential to Emit Values	5,027.00	484.51	2,448.28	271.95	3,134.77	25.65

Sources: AFMC 2004a and USAF 2004

Note: PM = Particulate Matter

### 3.3.3 Environmental Consequences

#### Evaluation Criteria

The environmental consequences on local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions compared to existing conditions and ambient air quality. Specifically, the effect in NAAQS attainment areas would be considered significant if the net increases in pollutant emissions caused or contributed to a violation of any national or state ambient air quality standard or represented an increase of 10 percent or more in an affected AQCR emissions inventory. In addition, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1  $\mu\text{g}/\text{m}^3$  or more (40 CFR 52.21(b)(23)(iii)).

In April 2007, the U.S. Supreme Court declared that carbon dioxide (CO<sub>2</sub>) and other greenhouse gases are air pollutants under the CAA. The Court declared that the USEPA has the authority to regulate emissions from new cars and trucks under the CAA. The USEPA has not promulgated an ambient air quality standard or *de minimis* level for CO<sub>2</sub> emissions for Federal actions, so there is no standard value to compare an action against in terms of meeting or violating the standard.

#### Preferred Alternative

The Preferred Alternative would have short-term and long-term minor adverse effects on air quality. **Table 3-6** summarizes the estimated air quality emissions from construction and operational activities. The estimated emissions from the Preferred Alternative would represent a minor percentage of the air emissions inventory locally in Okaloosa County and would represent a negligible percentage of the air emissions inventory regionally within the MPPCSMI AQCR.

**Construction Activities.** The construction of the AAFES Lifestyle Center as described in **Section 2.3** would generate air pollutant emissions as a result of grading, filling, compacting, trenching, and operation of construction equipment. Construction activities would also generate total suspended particulate and PM<sub>10</sub> emissions as fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Additionally, construction workers commuting daily to and from the construction site in their personal vehicles would result in criteria pollutant emissions. **Appendix E** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction activities. Emissions from construction activities associated with the Preferred Alternative would have short-term minor

**Table 3-6. Estimated Air Emissions Resulting from Implementation of the Preferred Alternative**

Activity	NO <sub>x</sub> tpy	VOC tpy	CO tpy	SO <sub>2</sub> tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy
<b>2009</b>						
<i>Construction Combustion</i>	15.54	1.83	6.56	0.85	1.05	1.02
<i>Construction Fugitive Dust</i>	--	--	--	--	19.94	2.94
<i>Construction Commuters</i>	0.87	0.86	8.35	0.01	0.07	0.05
<b>Total Preferred Alternative Emissions in 2009</b>	<b>16.41</b>	<b>2.69</b>	<b>14.91</b>	<b>0.86</b>	<b>21.06</b>	<b>4.00</b>
Percent of Okaloosa County Emissions Inventory	0.19%	0.01%	0.01%	0.12%	0.15%	0.04%
Percent of MPPCSMI AQCR Inventory	0.0042%	0.0004%	0.0003%	0.0001%	0.0001%	0.0002%
<b>2010</b>						
<i>Construction Combustion</i>	4.05	0.79	1.73	0.21	0.27	0.26
<i>Construction Commuters</i>	0.43	0.43	4.18	0.01	0.04	0.02
<b>Total Preferred Alternative Emissions in 2010</b>	<b>4.48</b>	<b>1.22</b>	<b>5.91</b>	<b>0.22</b>	<b>0.31</b>	<b>0.29</b>
Percent of Okaloosa County Emissions Inventory	0.05%	0.01%	0.00%	0.03%	0.002%	0.003%
Percent of MPPCSMI AQCR Inventory	0.0011%	0.0004%	0.0003%	0.0001%	0.0001%	0.0002%
<b>2011+</b>						
<b>Total Preferred Alternative Emissions in 2011+ from AAFES Workers and Patrons</b>	<b>33.11</b>	<b>33.41</b>	<b>323.86</b>	<b>0.42</b>	<b>3.48</b>	<b>2.22</b>
Percent of Okaloosa County Emissions Inventory	0.39%	0.17%	0.22%	0.06%	0.02%	0.02%
Percent of MPPCSMI AQCR Inventory	0.0084%	0.0107%	0.0176%	0.0001%	0.0010%	0.0016%

adverse effects on local air quality and would have negligible effects on regional air quality. Implementation of the Preferred Alternative would not result in violations of any ambient air quality standards.

Since Eglin AFB has a Title V permit, issuance of an air construction permit from FDEP would be required prior to beginning the proposed construction activities (F.A.C. 62-210.300). Construction activities would incorporate control measures to confine fugitive particulate matter in accordance with F.A.C. 62-296.320. Reasonable measures to limit fugitive dust emissions would be developed with the air construction permit in consideration of cost and the degree of emissions reduction realized, but could include the following (F.A.C. 62-296.320(4)(c)3):

- Paving and maintenance of roads, parking areas, and yards
- Application of water or chemicals to control emissions
- Application of asphalt, water, oil, chemicals, or other dust suppressants to unpaved roads, yards, open stock piles, and similar areas
- Removal of particulate matter from roads and other paved areas to prevent reentrainment and from buildings or work areas to prevent particulate matter from becoming airborne
- Landscaping or planting of vegetation
- Use of hoods, fans, filters, and similar equipment to contain, capture, or vent particulate matter
- Confining abrasive blasting, where possible
- Enclosure or covering of conveyor systems.

**Operations.** Long-term emissions of criteria pollutants would be expected as a result of retail workers and employees traveling to and from the AAFES Lifestyle Center. Since there are already AAFES facilities on Eglin AFB, the construction of the Lifestyle Center would only relocate many of the existing patrons and workers to a new location on Eglin AFB, so the actual increase of criteria pollutants from additional patrons and workers would be minor. **Appendix E** contains detailed calculations and the assumptions used to estimate the air quality emissions from the retail patrons and workers. Emissions from operational activities associated with the Preferred Alternative would have long-term minor adverse effects on local air quality, and would have negligible effects on regional air quality.

Implementation of the Preferred Alternative would not result in modifications to the existing Title V permit or require PSD or New Source Review permitting. The installation of emergency generators, if determined necessary for the AAFES facilities, could result in minor emissions of criteria air pollutants. New emergency generators that operate under limited conditions, such as a power outage and minor maintenance, are only required to submit notification to the FDEP and would not require an air operating permit (AFMC 2004b).

**Greenhouse Gas Emissions.** The Preferred Alternative would contribute directly to emissions of greenhouse gases from the combustion of fossil fuels from construction equipment and commuter vehicles. CO<sub>2</sub> accounts for 92 percent of all greenhouse gas emissions; electric utilities are the primary source of anthropogenic CO<sub>2</sub>, followed by transportation (FDEP 2008). FDEP estimates that in 2005, gross CO<sub>2</sub> emissions in Florida were 268.65 million metric tons of CO<sub>2</sub> equivalents, or 295,515,000 tons of CO<sub>2</sub> equivalents (FDEP 2008).

Total CO<sub>2</sub> emissions for 2009, 2010, and 2011 and beyond were estimated at 2,760 tons, 950 tons, and 43,207 tons, respectively (see **Appendix E** for detailed emissions calculations). Construction activities and operations would have minor adverse contributions to greenhouse gas emissions locally. The Preferred Alternative would have a negligible contribution towards statewide greenhouse gas inventories.

## Commissary Alternative

The Commissary Alternative would have short-term and long-term minor adverse effects on air quality. **Table 3-7** summarizes the estimated air quality emissions from construction and operational activities. The estimated emissions from the Commissary Alternative would represent a minor percentage of the air emissions inventory locally in Okaloosa County and would represent a negligible percentage of air emissions inventory regionally within the MPPCSMI AQCR. The effects on air quality from the

**Table 3-7. Estimated Air Emissions Resulting from Implementation of the Commissary Alternative**

Activity	NO <sub>x</sub> tpy	VOC tpy	CO tpy	SO <sub>2</sub> tpy	PM <sub>10</sub> tpy	PM <sub>2.5</sub> tpy
<b>2009</b>						
<i>Construction Combustion</i>	15.90	1.88	6.71	0.85	1.07	1.04
<i>Construction Fugitive Dust</i>	--	--	--	--	19.94	2.94
<i>Construction Commuters</i>	0.87	0.86	8.35	0.01	0.07	0.05
<b>Total Commissary Alternative Emissions in 2009</b>	<b>16.77</b>	<b>2.74</b>	<b>15.06</b>	<b>0.86</b>	<b>21.09</b>	<b>4.02</b>
Percent of Okaloosa County Emissions Inventory	0.20%	0.01%	0.01%	0.13%	0.15%	0.04%
Percent of MPPCSMI AQCR Inventory	0.0043%	0.0009%	0.0008%	0.0002%	0.0063%	0.0029%
<b>2010</b>						
<i>Construction Combustion</i>	4.23	0.83	1.80	0.22	0.28	0.28
<i>Construction Commuters</i>	0.43	0.43	4.18	0.01	0.04	0.02
<b>Total Commissary Alternative Emissions in 2010</b>	<b>4.66</b>	<b>1.25</b>	<b>5.98</b>	<b>0.22</b>	<b>0.32</b>	<b>0.30</b>
Percent of Okaloosa County Emissions Inventory	0.05%	0.01%	0.00%	0.03%	0.002%	0.003%
Percent of MPPCSMI AQCR Inventory	0.0012%	0.0004%	0.0003%	0.0001%	0.0001%	0.0002%
<b>2011+</b>						
<b>Total Commissary Alternative Emissions in 2011+ from AAFES Workers and Patrons</b>	<b>33.11</b>	<b>33.41</b>	<b>323.86</b>	<b>0.42</b>	<b>3.48</b>	<b>2.22</b>
Percent of Okaloosa County Emissions Inventory	0.39%	0.17%	0.22%	0.06%	0.02%	0.02%
Percent of MPPCSMI AQCR Inventory	0.0084%	0.0107%	0.0176%	0.0001%	0.0010%	0.0016%

Commissary Alternative would be generally the same but slightly more adverse than those described under the Preferred Alternative. Implementation of the Commissary Alternative would not result in violations of any ambient air quality standards. Refer to detailed discussion under the Preferred Alternative. Detailed air quality calculations are included in **Appendix E**.

### No Action Alternative

Under the No Action Alternative, Eglin AFB would not construct the AAFES Lifestyle Center, which would result in the continuation of the existing condition, as described in **Section 3.3.2**. No direct environmental effects would be expected on local or regional air quality from implementation of the No Action Alternative.

## 3.4 Geological Resources

### 3.4.1 Definition of the Resource

Geological resources consist of the Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of topography and physiography, geology, soils, and, where applicable, geologic hazards and paleontology.

Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural and human-made features.

Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock or other parent material. Soils typically are described in terms of their complex type, slope, and physical characteristics. Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. In appropriate cases, soil properties must be examined for their compatibility with particular construction activities or types of land use.

The State of Florida requires an ERP before any construction project is initiated that would affect wetlands, alter surface water flows, or contribute to water pollution. Dredging and filling in wetlands and other surface waters is regulated by the NFWFMD under the Wetlands Regulation Permit (FDEP 2007). In addition, storm water discharges must meet state water quality standards, as outlined in F.A.C. 62-302. Degradation to water quality that might occur through alteration of soils could result from increased turbidity, dissolved solids, and excessive nutrients (F.A.C. 62-302).

### 3.4.2 Description of the Affected Environment

**Physiography and Topography.** Eglin AFB is located in three physiographic regions of the Gulf Coastal Plain Physiographic Province, including the Coastal Barrier Island Chain, the Coastal Lowlands, and the Western Highlands (EAFB 2002). The proposed site is within the Coastal Lowlands, which has relatively flat topography that gently falls in elevation to the oceanic shore margin. The elevation of the proposed site ranges from 25 feet above mean sea level (MSL) along Sunset Lane to 60 feet above MSL along SR 189, the northern boundary of the site of the Preferred Alternative (TopoZone 2007). As discussed in **Section 3.5.2**, there are three unnamed drainages that run through the proposed site along both east-west boundaries and through the center, emptying in Poquito Bayou. There were no visible drainages observed during the field survey of the site. In addition, a former sand pit exists in the southwestern corner. With the sand pit as the exception, the steepest grades in the proposed site can be found in the south along Sunset Lane.

**Geology.** The local geology of Eglin AFB is composed of riverine and marine sands and clays as well as limestone and dolomite. The geologic age of the strata under Eglin AFB ranges from Miocene to Recent, with the first 250 feet below surface composed of the Citronelle Formation. The Citronelle Formation is formed of sediments suggesting early riverine deposits that emptied into the Gulf of Mexico. The Citronelle Formation is composed of two types of sandy clay. The younger of the two units is a massive gray clay with a small amount of quartz sand. The older unit is a mottled red and gray clay with a higher percentage of quartz sand. Underlying the Citronelle formation is the Allum Bluff Group, a Miocene-aged coarse clastic unit with clay deposits measuring several hundred feet thick. Limestones underlie the Allum Bluff Group for several hundred feet (EAFB 2002).

**Soils.** Eight major surface soils are mapped on Eglin AFB and are typically sandy and permeable with a shallow water table (i.e., 6 feet or less below ground surface). Two phases of the Lakeland sand are mapped on Eglin AFB. The Lakeland sand with a slope from 0 to 5 percent, formed in permeable eolian or sandy marine deposits. These soils compose 98.2 percent of surface soils at the proposed site (NRCS 2008). The Lakeland sand unit with a slope of 5 to 12 percent is in the southern corner of the proposed site. This unit composes 0.3 percent of the proposed site, and is also excessively drained and formed in eolian or sandy marine deposits. Lakeland Sand of 0 to 5 percent slope in the southeastern portion of the proposed site has been designated as AOC-54 and has recently had arsenic-contaminated soils removed.

The Foxworth sand unit, which is mapped in the southeastern section of the proposed site, has slopes ranging from 0 to 5 percent, increasing near intermittent streams. The Foxworth sand unit composes 1.0 percent of the proposed site. Lastly, Udorthents, which consist of a poorly drained sandy loam, are mapped in the southeastern portion of the proposed site in association with a borrow pit. This mapping unit composes approximately 0.5 percent of the site. This unit's permeability ranges from moderately low to very high. None of the soils mapped on the site are designated as prime or unique farmland soils in Okaloosa County.

### 3.4.3 Environmental Consequences

#### Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a proposed action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would be significant if they would alter the lithology, stratigraphy, and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

#### Preferred Alternative

Negligible to minor long-term adverse impacts would be expected from implementation of the Preferred Alternative. No geologic hazards exist for the proposed site. Each soil unit was analyzed to determine any construction and operational limitations, according to the Natural Resources Conservation Service Web Soil Survey (NRCS 2008). Construction and operation of residences and roads would be somewhat limited by the Lakeland sand due to the 5 to 12 percent slope and Udorthents due to the presence of shrink-swell clays. Small commercial buildings are very limited on the Lakeland Sand (5 to 12 percent slope) due to slope, and somewhat limited due to shrink swell properties of the Udorthents. Residences with basements are limited by each soil unit except for the Lakeland sand (0 to 5 percent slope). As these soil units could pose construction issues due to slope stability and shrink swell concerns, BMPs should be implemented to aid in the design and construction processes for mitigation purposes.

Minor changes to topography would be expected due to grading and filling activities during construction of facilities, infrastructure, and roads. This change would be irretrievable and considered a minor long-term adverse impact. Because of the grading and filling activities, soil erosion and storm water runoff would result. In addition, an increase in impervious surfaces would result from this action, affecting storm water runoff. The AAFES Lifestyle Center developer would be required to make an application to the NWFWM under the ERP program due to resulting increased impervious surfaces or alterations of storm water flow. The ERP permit is discussed in detail in **Section 3.5.1.** Effects on soils, including

sedimentation and erosion, would be reduced to negligible to minor by implementing BMPs. Examples of erosion and sediment controls and BMPs include temporary sediment basins, sediment fencing, or revegetation for ground stabilization. A detailed analysis of environmental consequences of the Preferred Alternative on water resources can be found in **Section 3.5.3**.

### **Commissary Alternative**

Negligible to minor long-term adverse impacts would be expected from implementation of the Commissary Alternative. Environmental consequences would be similar to those for the Preferred Alternative, but impervious surfaces would increase by an additional 325,000 ft<sup>2</sup>. An ERP and associated BMPs would be required to mitigate erosion and sedimentation for the Commissary Alternative.

### **No Action Alternative**

Under the No Action Alternative, the proposed site would not be constructed and existing conditions would remain as described in **Section 3.4.2**. No effects on geological resources would be expected.

## **3.5 Water Resources**

### **3.5.1 Definition of the Resource**

Water resources include groundwater, surface water, and floodplains. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater consists of subsurface hydrologic resources. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Storm water is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade lakes, rivers, and streams. Storm water flows, which can be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to the management of surface water. Storm water systems convey storm water runoff away from developed sites to receiving surface waters. Various systems and devices might be used to slow the movement of water. For instance, a large, sudden flow could scour a streambed and harm biological resources. Storm water systems provide the benefit of reducing sediments and other contaminants that would otherwise flow directly into surface waters. Failure to size storm water systems appropriately to hold or delay conveyance of the largest predicted precipitation event often leads to downstream flooding and the environmental and economic damages associated with flooding. Higher densities of development, such as those found in urban areas, require greater degrees of storm water management because of the higher proportions of impervious surfaces that occur in urban areas.

The CWA (33 U.S.C. 1251 et. seq., as amended) establishes Federal limits, through the NPDES, on the amounts of specific pollutants that are discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water. The NPDES program regulates the discharge of point (end of pipe) and nonpoint sources (storm water) of water pollution. Florida administers the Federal NPDES permit program for the discharge of storm water through the FDEP. Section 404 of the CWA regulates the discharge of fill material into waters of the United States, which includes some wetlands.

In addition to the Federal NPDES permit program requirements, Florida also regulates storm water at the local level through the Florida ERP program. On 1 October 2007, Phase I of the ERP program became effective. This current phase focuses on activities that have the potential to generate storm water runoff and regulates the quality of runoff for all activities, and the quantity for those activities that exceed specific parameters. The NFWFMD is the agency responsible for ERP permitting in Okaloosa County. The ERP program requires a single permit application for storm water management for construction through operational phases of a development project. The AAFES Lifestyle Center developer would be required to make an application to the NFWFMD under the ERP program because the AAFES Lifestyle Center would result in increased impervious surfaces or alterations of storm water flow. Phase II rules are in the final stages of Rule development. Phase II would regulate impacts on wetlands at the state level. They would incorporate the current storm water regulations with new regulations for activities that occur in, on, or over wetlands and other surface waters. The operating agreement is being reviewed at this time and some changes can be expected. The implementation date for full ERP is tentatively scheduled for January 2009. The rules regarding the Florida ERP program are found in the F.A.C. Chapter 62-346 (NFWFMD 2008a).

Floodplains are areas of low-level ground present along rivers, stream channels, or coastal waters. Such lands might be subject to periodic or infrequent inundation due to a flood created by rain or melting snow. Risk of flooding typically hinges on local topography, the frequency of precipitation events, and the size of the watershed above the floodplain. Flood potential is evaluated by FEMA, which defines the 100-year floodplain. The 100-year floodplain is the area within which there is a 1 percent chance of inundation by a flood event in a given year. Certain facilities inherently pose too great a risk from flooding to be located in either the 100- or 500-year floodplain, such as hospitals, schools, or storage buildings for irreplaceable records. Federal, state, and local regulations often limit floodplain development to passive uses, such as recreational and preservation activities, to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of appropriate FEMA Flood Insurance Rate Maps, which contain enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative. Where the only practicable alternative is to site in a floodplain, a specific step-by-step process must be followed to comply with EO 11988. The process is outlined in the FEMA document *Further Advice on EO 11988 Floodplain Management*. As a planning tool, the NEPA process incorporates floodplain management through analysis and through coordination with applicable regulatory agencies that will review this EA.

### **3.5.2 Description of the Affected Environment**

**Groundwater.** There are two prominent aquifers at Eglin AFB and in the surrounding area: the surficial Sand and Gravel Aquifer and the regional Floridan Aquifer (NFWFMD 2008b). The Sand and Gravel Aquifer consists of the Citronelle Formation and marine terrace deposits, which thicken to the southwest. In the vicinity of Fort Walton Beach, this shallow aquifer consists of several distinct sandy units, the lowest of which is the main producing zone. Yields from wells in this zone vary considerably but are generally in the range of 200 to 400 gallons per minute. The Sand and Gravel Aquifer is an important source of drinking or irrigation water for Escambia, Okaloosa, Santa Rosa, and Walton counties. In the Coastal Lowlands physiographic province, where the proposed site is located, the water table is at or within a few feet of land surface (EAFB 2002).

The deep, regional Floridan Aquifer consists of a thick sequence of interbedded limestones and dolomites overlain by the Pensacola Clay confining bed. This aquifer is highly productive and provides water to large cities and rural communities in parts of Alabama, Georgia, South Carolina, and Florida. South of

Lake Okeechobee in Florida, the aquifer contains saltwater. Some of this saltwater is withdrawn for cooling purposes and some is withdrawn and converted to freshwater by desalinization plants. Desalinization is especially important in the Florida Keys, which have no other source of freshwater except that which is imported by pipeline (USGS 1990). The Bucatunna Formation separates the Floridan Aquifer into upper and lower limestone units. The lower unit is saline; the upper unit is used as potable water for Eglin AFB and the surrounding communities. Yields from wells are large, ordinarily in the range of 250 to more than 1,000 gallons per minute. The NFWFMD regulates consumptive uses of all water within the Florida panhandle through consumptive use permits, including irrigation well permits (AFMC 2006).

Groundwater monitoring wells could be installed at the southeastern corner of the proposed site, designated as AOC-54. This site is a third-party Installation Restoration Program site, meaning that it had been contaminated and is in the process of clean-up. AOC-54 recently had arsenic-contaminated soils removed; groundwater monitoring wells are proposed for the site to determine if arsenic contamination has leached from soils into groundwater.

**Surface Water.** Eglin AFB encompasses portions of three hydrologic basins: Choctawhatchee Bay, Yellow River Basin, and Pensacola Bay (of which East Bay is a portion). The northern and western portions of the installation are characterized by primary channels flowing east to west, with secondary channels flowing south to north. Most of these drainage systems are characterized by U-shaped channels and trellis-type patterns (i.e., intersecting at right angles). The eastern and southeastern portions of the installation are characterized by V-shaped primary channels flowing north to south, with tributaries oriented in a dendritic pattern (i.e., branching like tree limbs). There are numerous surface water bodies on Eglin AFB (EAFB 2002).

**Figure 3-4** shows surface water resources in and surrounding the proposed site. The proposed site and the area surrounding it drain towards Poquito Bayou, which flows into Choctawhatchee Bay. There are two intermittent streams on the proposed site. Both streams cross Sunset Lane and eventually connect to Choctawhatchee Bay southwest of Sunset Lane. The first stream runs almost parallel with Poquito Road with the second stream located on the south side of the property boundary, running parallel to Eglin Boulevard and eventually crossing the SR 85 turnoff. Both streams were dry during the field survey, but there was evidence of flowing water through the stream channels (Tidwell 2008).

There is a drainage pipe running from the north side of SR-189 that empties onto the northwestern corner of the proposed site. There is a large sand pit in the southern section of the proposed site, north of Sunset Lane and between the two intermittent stream channels.

FDEP completed a Water Quality Assessment Report in 2006. The purpose of this assessment report is to provide a verified list of impaired water for which a total maximum daily load (TMDL) of a given pollutant must be developed pursuant to Section 303(d) of the CWA and the Florida Watershed Restoration Act (Chapter 99-223, Law of Florida). Drainage from the proposed site flows to Poquito Bayou (water body identification number 754). This water body segment is classified as a Class III water body, meaning that it should be used for recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife. However, a bacterial impairment has been identified for Poquito Bayou, resulting in the loss of its Class III designation. As a result, Poquito Bayou has been placed on the verified list of impaired waters for the Choctawhatchee Basin. It is anticipated that a TMDL would be developed for Poquito Bayou in 2009 (FDEP 2006b).

**Floodplains.** Flooding could occur on Eglin AFB as a result of rainfall within the installation's drainage basins, from hurricanes, or a combination of both. The majority of the installation is outside of the 100-year floodplain, though portions of the Yellow River drainage system and East Bay Swamp are

flood-prone (EAFB 2002). According to the FEMA Flood Insurance Rate Map, the proposed site is outside of the 100- and 500-year floodplains (FEMA 2002). Garnier and Poquito bayous do have associated 100-year floodplains, but these are more than 1,500 feet from the southern edge of the proposed site. Floodplains in the vicinity of the proposed site are shown in **Figure 3-4**.

**Coastal Zone Management.** In Florida, the Coastal Management Program under the CZMA incorporates 23 statutes that protect and enhance Florida's natural, cultural, and economic coastal resources (FDEP 2006a). Florida has limited its consistency review of federally licensed and permitted activities as identified in Florida Statutes Section 380. As identified in Section 380.23(3)(c), laws requiring licenses or permits that are potentially relevant to Eglin AFB and this Proposed Action, and therefore necessitate consistency review, include the Rivers and Harbors Act and the CWA. Eglin AFB has prepared a consistency determination for the Preferred Alternative (**Appendix F**). The consistency determination was reviewed by the Florida Coastal Management Program through the Florida Clearinghouse review process. The CZMA consistency determination, found in **Appendix F**, states that the Proposed Action would not adversely affect resources provided that proper avoidance and mitigation techniques are used.

### **3.5.3 Environmental Consequences**

#### **Evaluation Criteria**

Evaluation criteria for effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A proposed action would have significant effects on water resources if it were to do one or more of the following:

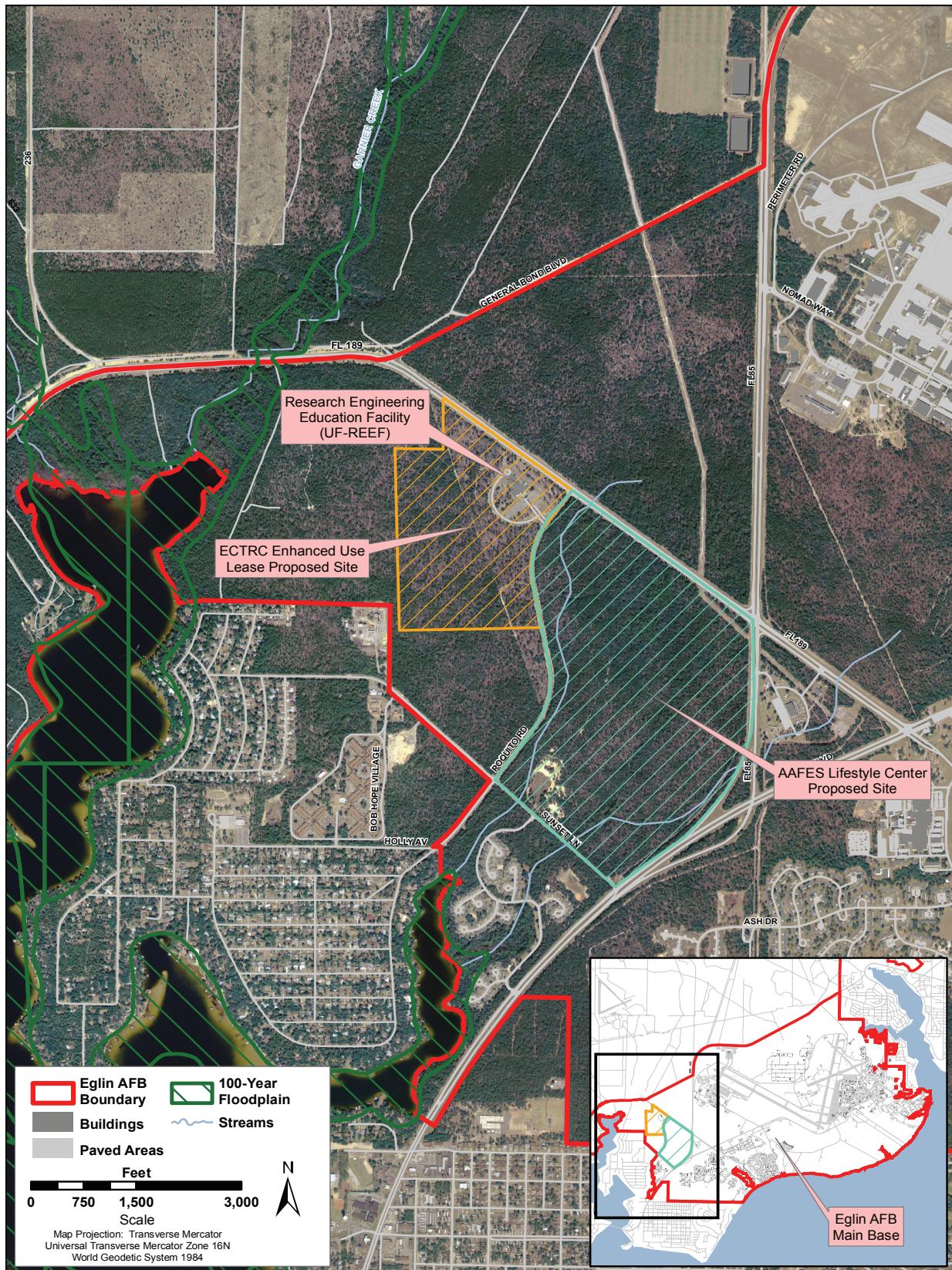
- Substantially reduce water availability or supply to existing users
- Overdraft groundwater basins
- Exceed safe annual yield of water supply sources
- Substantially adversely affect water quality
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

The potential effect of flood hazards on a proposed action is important if such an action occurs in an area with a high probability of flooding.

#### **Preferred Alternative**

Implementation of the Preferred Alternative has the potential to result in short- and long-term adverse effects on water resources. Implementation of BMPs, appropriate management of storm water during and following construction, and adherence to all required permits would reduce the potential for adverse effects. The proposed site is not within the 100-year floodplain.

There are two intermittent streams on the proposed site that ultimately drain to Poquito Bayou. Because there are existing drainages, the proposed site has the potential for adverse effects on surface water bodies in the event of a spill or uncontrolled erosion. Implementation of BMPs as discussed below, and adherence to good housekeeping would reduce the potential for adverse effects on Poquito Bayou, the receiving water body of these unnamed drainages. Any alterations to these drainages would be considered a minor adverse effect. It is recommended that construction at the proposed site avoid these existing drainages.



Source of Base Data: Eglin AFB

**Figure 3-4. Water Resources at the Proposed Site**

It is not anticipated that surface water or groundwater quality or quantity would be noticeably diminished following implementation of the Preferred Alternative. Potential short- and long-term effects are presented in the following discussion.

**Short-Term Effects.** Construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. During storm events, overland storm flow picks up and carries contaminants (e.g., soil or leaked motor oil) directly into receiving surface water bodies or possibly into the surficial Sand and Gravel Aquifer at Eglin AFB. The construction contractor would obtain all necessary construction permits and comply with the requirements and guidelines set forth in those permits.

The Preferred Alternative would require an NPDES General Permit for Storm Water Discharge from Large Construction Activities. A site-specific Storm Water Pollution Prevention Plan would be prepared in association with the NPDES construction permit that includes BMPs to reduce the potential for soil erosion and prevent contaminant-laden storm water from leaving the construction site. The site-specific Storm Water Pollution Prevention Plan would be developed by the construction contractor as a bid requirement for the contract, and could include the following measures (EAFB 1999 and EAFB 2003):

- Runoff control by minimizing clearing and stabilizing drainageways
- Erosion control by stabilizing exposed soils, protecting steep slopes, protecting waterways, and phasing construction
- Sediment control by installing perimeter controls, sediment trapping devices, and inlet protection
- Good housekeeping to include general construction site waste management, spill prevention and control plan, and establishing appropriate vehicle maintenance and washing areas
- Adequate personnel training and documentation.

All construction BMPs would be approved by the Eglin AFB Civil Engineering Department to ensure they are adequate. The construction site would also be subject to onsite inspections to ensure that sediment and erosion controls are compliant with the permitting requirements and that good housekeeping measures are being employed.

Assuming proper use of BMPs to contain construction effects to the active construction site, minor adverse effects could occur. In the event of a spill or leak of fuel or other construction-related products, there could be adverse effects on the surficial Sand and Gravel Aquifer. This aquifer is not used for potable water supply in the immediate vicinity of Eglin AFB, but it is used in that capacity further west. All construction equipment would be maintained according to the manufacturer's specifications to ensure it is in proper working order. All fuels and other potentially hazardous materials would be contained and stored appropriately. In the event of a spill, procedures identified in the Eglin AFB Spill Prevention Control and Countermeasures Plan would be followed to quickly contain and clean up a spill. There remains the possibility that a spill or leak could occur, but implementation of the BMPs identified in the site-specific Storm Water Pollution Prevention Plan would minimize the extent of contamination.

**Long-Term Effects.** The Preferred Alternative would result in small increases in consumption of potable water. The regional Floridan Aquifer supplies water for the Eglin AFB area. The long-term use of the Floridan Aquifer as a result of implementing the Preferred Alternative would be a negligible contribution to the overall use of the Floridan Aquifer. Refer to **Section 3.10.3** for discussion of the water capacity and infrastructure requirements associated with the Preferred Alternative, and measures to minimize water use.

The Preferred Alternative would result in an increase of impervious surfaces. As set forth in **Section 2.3**, the Preferred Alternative would require various structures that total approximately 2,437,500 ft<sup>2</sup>. It is anticipated that the overall increase in impervious surfaces would be 76 acres. The creation of impervious surfaces has the potential to decrease storm water quality and increase storm water quantity and flow velocity, particularly during large rain events. Overland storm flows pick up contaminants and carry them directly into receiving water bodies. Large areas of impervious pavement that once were pervious soils increase the speed at which storm water enters channels; if a stream channel cannot accommodate the increased volume of storm water, areas downstream can flood. An increase in impervious areas can also reduce the land that is available for groundwater recharge. Approximately 24 acres of green space would be retained at the proposed site and storm water retention would be constructed.

The proposed site is not in the 100-year floodplain, and construction of the AAFES Lifestyle Center at this site would not be expected to stimulate development within the floodplain. While the development of 76 acres and loss of that pervious area is an irretrievable adverse effect, this loss of recharge area for the Sand and Gravel Aquifer would be negligible when compared with the total recharge area that is available.

Long-term operational activities associated with the Preferred Alternative have the potential to moderately adversely affect surface water and groundwater quality as a result of nonpoint source pollution. There would be more cars onsite that could leak fuel or other hazardous materials, and there would be increased use of pesticides and fertilizers for landscaped areas. During rain events, storm water picks up pollutants and could discharge them to Poquito Bayou, or contaminated rainwater could infiltrate through the sandy soil into the Sand and Gravel Aquifer resulting in long-term moderate adverse effects on water quality. However, these effects would be mitigated through planned implementation of the various applicable Federal and state storm water permitting requirements so that no water quality violations would be expected; water quality would be maintained by using BMPs and storm water management as described in the following text.

Under the Preferred Alternative, a storm water management system would be designed to contain and treat storm water so that potential flooding and contamination are minimized. The storm water management on site would be implemented under the NFWFMD ERP program, which became effective in October 2007 (refer to **Section 3.5.1** for a brief discussion). Implementing the Preferred Alternative would require an ERP from NFWFMD because impervious surfaces would increase and storm water flows would be altered. In addition, the Lifestyle Center developer would be required to coordinate with FDEP for additional storm water permitting under the NPDES program. Storm water BMPs under the NPDES program would add to the ERP program requirements and ultimately attenuate the potential adverse effects the Preferred Alternative could have on water quality and quantity.

In addition to the ERP program and the NPDES general storm water permit for construction activities, the proposed site would need to coordinate with Eglin AFB or Okaloosa County for the implementation of storm water management BMPs that are consistent with each jurisdiction's MS4 permit and storm water management plan. The MS4 permit program requires development, implementation, and enforcement of a Storm Water Management Program (SWMP) for construction (i.e., building the Lifestyle Center) and operations (i.e., parking lot spill management, trash bin management, storm water collection management). As discussed in **Section 3.5.2**, FDEP would begin determining the TMDL for Poquito Bayou in 2009 to reduce bacterial loads into that water body. If the Preferred Alternative is implemented, requirements as a result of the TMDL determination could be incorporated into the BMPs.

Post-construction runoff control is accomplished using a variety of structural and nonstructural BMPs. Specific BMPs would be developed during the final design stage of construction and included in the appropriate permits. Structural BMPs could include combinations of the following (EAFB 2003):

- Construction of ponds (e.g., dry extended detention ponds, wet ponds)
- Infiltration practices (e.g., infiltration basin, infiltration trench, porous pavements)
- Filtration practices (e.g., bioretention, sand and organic filters)
- Vegetative practices (e.g., storm water wetland, grassed swales, grassed filter strip)
- Runoff pretreatment practices (e.g., catch basin, in-line storage, manufactured products for storm water inlets).

Nonstructural BMPs would be used in conjunction with structural BMPs. Nonstructural BMPs would be incorporated into the site design, such as retention of 24 acres of green space. All proposed BMPs would be subject to regulatory approval during the permitting process and the approval of Eglin AFB Civil Engineering Department. Good housekeeping and pollution prevention measures would be followed to minimize potential sources of pollution during operations. Existing pollution prevention measures would be used since the kinds of operations associated with the Preferred Alternative would be similar to ongoing activities at Eglin AFB. Examples of nonstructural BMPs could include the following (EAFB 2003):

- Automobile maintenance restricted to specific contained areas
- Vehicle washing restricted to specific contained areas
- Landscaping and lawn care to minimize the application of fertilizers, pesticides, and herbicides
- Street and parking lot sweeping to remove small quantities of dry chemicals and solids from areas exposed to rainfall or storm water runoff
- Hazardous materials storage with spill containment.

### **Commissary Alternative**

Under the Commissary Alternative, the base Commissary would move to the proposed Lifestyle Center. Under this alternative, an additional 100,000 ft<sup>2</sup> of retail space would be constructed at the proposed site. This additional space would also require an additional 500 parking spaces, which translates into an additional 225,000 ft<sup>2</sup> (5 acres) of pavement. Under this alternative, the existing commissary space on base would be reused as future administrative or storage space. There would be 7.5 additional acres of impervious surfaces created as a result of the Commissary Alternative. The short-term and long-term impacts described for the proposed site would be similar to the impacts expected for the Commissary Alternative. Compared to the proposed site, the additional 7.5 acres of impervious surfaces needed for the Commissary Alternative would pose a slightly more adverse effect on water resources.

### **No Action Alternative**

Under the No Action Alternative, the proposed site would not be constructed resulting in continuation of the existing condition as described in **Section 3.5.2**. No effects on water resources would be expected.

## 3.6 Biological Resources

### 3.6.1 Definition of the Resource

Biological resources include plants, animals and the habitats in which they exist such as wetlands, forests, and grasslands. The biological resources of an area can be protected and sensitive. Protected and sensitive plants and animals can be listed as either endangered or threatened at the Federal or state level, a candidate species for Federal listing, a species of special concern (SSC), or managed under conservation agreements or management plans. Habitats necessary to support listed species can also be proposed or designated as critical habitat.

Under the ESA (16 U.S.C. § 1536), an endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species likely to become an endangered species in the foreseeable future. Although candidate species receive no statutory protection under the ESA, the U.S. Fish and Wildlife Service (USFWS) advises government agencies, industry, and the public that these species are at risk and might warrant protection under the ESA in the future.

The Migratory Bird Treaty Act (16 USC 703-712; 1997-Supp) and EO13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, protect migratory birds and their habitats and establish a permitting process for legal taking. A migratory bird is defined by the USFWS as any species or family of birds that lives, reproduces, or migrates within or across international borders at some point during their annual life cycle. For normal and routine operations such as installation support functions, actions of the DOD may not result in pursuit, hunting, taking, capturing, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof, except as permitted. The DOD must address these routine operations through the Memorandum of Understanding (MOU) developed in accordance with EO 13186 (DOD and USFWS 2006). Under the 2003 National Defense Authorization Act, the Armed Forces are exempted from the incidental taking of migratory birds during military readiness activities, except in cases where an activity would likely cause a significant adverse effect to the population of a migratory bird species. As detailed in the final rule in the Federal Register (50 CFR 21), in this situation the Armed Forces, in cooperation with the USFWS, must develop and implement conservation measures to mitigate or minimize the significant adverse impacts (Federal Register 2007).

Wetlands are important natural systems and habitats which can support a diverse number of different species. Wetlands perform a great number of important biological functions, some of which include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, and erosion protection. Some wetlands are protected as a subset of “the waters of the United States” under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats, including some wetlands. The USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR Part 328).

The USACE is responsible for asserting jurisdiction over wetlands that it determines fall within the protections of Section 404 of the CWA. Section 404 of the CWA authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill materials into the waters of the United States, including jurisdictional wetlands. Additionally, Section 404 of the CWA also grants states with sufficient resources the right to assume these responsibilities. The Natural Resources Conservation Service (NRCS) has developed procedures for identifying wetlands for compliance with the Food Security Act of 1985, and the USFWS, as a component of the National

Wetlands Inventory, has developed a classification system for identifying wetland types. Through the National Wetlands Inventory, the USFWS is the principal Federal agency that provides information to the public on the extent and status of wetlands. EO 11990, *Protection of Wetlands*, requires that Federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

### 3.6.2 Description of the Affected Environment

**Vegetation.** The proposed site is predominately a high, dry, and forested area with an overstory dominated by sand pine (*Pinus clausa*), turkey oak (*Quercus laevis*), live oak (*Quercus virginiana*), magnolia (*Magnolia ashei*), and a few scattered longleaf pine (*Pinus palustris*) (EAFB 2008c and EAFB 2008d). The understory consists mainly of saw palmetto (*Serenoa revens*), brackenfern (*Pteridium aquilinum*), and yaupon holly (*Ilex vomitoria*) (Tidwell 2008). The longleaf pine is being replaced by sand pine and turkey oak due to the absence of fire. There is also a decreasing abundance of longleaf pine in the understory and shrub strata. The site contains numerous stumps, stump holes, and scattered trash dumps. The groundcover is a poor representation of native plant cover (FNAI 2006). The proximity of this area to existing developments makes the use of fire as a management tool unfeasible and, therefore, this location has a low priority for habitat rehabilitation.

Invasive non-native plant species have been documented at many locations across Eglin AFB. The most problematic areas with invasive plant species concerns are associated with the urban interface where illegal dumping and natural seed dispersal from private property have allowed establishment of invasive species on adjacent USAF property. The Eglin Main Base has several areas of concern involving invasive non-native plant species because of the urban interface and past landscaping practices where Chinese tallow and other invasive plant species were used in main base housing and other landscapes. Road construction and maintenance activities have introduced and spread cogon grass and torpedo grass to areas of the Eglin reservation road system and adjacent natural areas.

The Florida Exotic Pest Plant Council (FLEPPC) has developed a ranking system for invasive non-native plants as to their invasiveness in natural areas. Category I species are those species that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with native species. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage. Category II species are those species that have increased in abundance or frequency but have not yet altered Florida plant communities. These species may be ranked Category I, if ecological damage is demonstrated (FLEPPC's 2005 List of Invasive Species).

To date, 18 Category I and 8 Category II species have been documented on Eglin AFB. Chinese tallow, or popcorn tree (*Triadica sebifera*), cogon grass (*Imperata cylindrical*), Japanese climbing fern (*Lygodium japonicum*), Chinese privet/hedge (*Ligustrum sinense*), and torpedo grass (*Panicum repens*) have been prioritized as the most problematic of the Category 1 species impacting Eglin ecosystems. Many of Eglin's high quality natural areas and sensitive species are threatened by these non-native invasive species. Several other invasive non-native plant species have been documented on Eglin, but are not yet considered major problem species. **Table 3.8** lists Category 1 and Category 2 species for Eglin AFB.

**Table 3-8. Category 1 and Category 2 species at Eglin AFB**

Category 1	Category 2
Mimosa ( <i>Albizia julibrissin</i> )	Tung oil tree ( <i>Aleurites fordii</i> ) ( <i>Vernicia fordii</i> )
Asparagus fern ( <i>Asparagus aethiopicus</i> )	Alligator weed ( <i>Alternanthera philoxeroides</i> )
Camphor-tree ( <i>Cinnamomum camphora</i> )	Coral vine ( <i>Antigonon leptopus</i> )
Wild taro ( <i>Colocasia esculenta</i> )	Silverthorn ( <i>Elaeagnus pungens</i> )
Air potato ( <i>Dioscorea bulbifera</i> )	Chinaberry ( <i>Melia azedarach</i> )
Water hyacinth ( <i>Eichhornia crassipes</i> )	Chinese brake fern ( <i>Pteris vittata</i> )
Lantana ( <i>Lantana camera</i> )	Purple sesban/rattlebox ( <i>Sesbania punicea</i> )
Glossy privet ( <i>Ligustrum lucidum</i> )	Chinese wisteria ( <i>Wisteria sinensis</i> )
Japanese honeysuckle ( <i>Lygodium japonicum</i> )	
Nandina / heavenly bamboo ( <i>Nandina domestica</i> )	
Kudzu ( <i>Pueraria montana</i> )	
Natal grass ( <i>Rhynchospora repens</i> )	
Tropical soda apple ( <i>Solanum viarum</i> )	

**Wildlife.** Mammalian species common to the proposed site include gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), and the nine-banded armadillo (*Dasypus novemcinctus*). Examples of avian species include blue jay (*Cyanocitta cristata*), English sparrow (*Passer domesticus*), common grackle (*Quiscalus quiscula*), pileated woodpecker (*Dryocopus pileatus*), and yellow-bellied sapsucker (*Sphyrapicus varius*). Common reptile species include the green anole (*Anolis carolinensis*), southern fence lizard (*Sceloporus undulatus undulatus*), and the southern ringneck snake (*Diadophis punctatus punctatus*) (EAFB 2008c).

**Protected or Sensitive Species.** There are two federally listed species that have the potential to occur on the proposed site, although survey data do not indicate any actual occurrences. These include the threatened eastern indigo snake (*Drymarchon corais couperi*) and the endangered red-cockaded woodpecker (*Picoides borealis*). The eastern indigo snake and the red-cockaded woodpecker are also listed as state threatened. Additional state-listed species with a potential to occur on the proposed site include the threatened Florida black bear (*Ursus americanus floridanus*) and Southeastern American kestrel (*Falco sparverius paulus*) (Miller 2008). A survey for the Florida Natural Area Inventory (FNAI), performed in Fall 2006, found the pineland hoary-pea (*Tephrosia mohrii*), which is state-listed as threatened, and the gopher tortoise (*Gopherus polyphemus*), which is a state threatened species, present on the proposed site (FNAI 2006 and Miller 2008). **Table 3-9** provides a list of special status species potentially occurring on the proposed site.

The eastern indigo snake is a federally and state-listed threatened species. The snake requires well-drained, sandy soils and frequents stream bottoms, riparian habitats, high ground, hammocks and pine flatwoods. The eastern indigo snake could occur anywhere on Eglin AFB, including the proposed site, because it utilizes a variety of habitats. Gopher tortoise burrows and other subterranean cavities are commonly used as dens and for egg laying (EAFB 2008b). The eastern indigo snake is very elusive and rare and has not had a confirmed sighting on Eglin AFB in many years (Miller 2008). A survey of the proposed site would be conducted prior to construction activities.

**Table 3-9. Listed Species Potentially Occurring on the Proposed Site.**

Scientific Name	Common Name	Federal Status	State Status
<b>Fauna</b>			
<i>Drymarchon corais couperi</i>	eastern indigo snake	T	T
<i>Picoides borealis</i>	red-cockaded woodpecker	E	T
<i>Falco sparverius paulus</i>	southeastern American kestrel	---	T
<i>Gopherus polyphemus</i>	gopher tortoise	---	T
<i>Ursus americanus floridanus</i>	Florida black bear	---	T
<b>Flora</b>			
<i>Tephrosia mohrii</i>	pineland hoary-pea	MC	T

Source: Miller 2008 and EAFB 2008c

Notes:

E - Endangered

T - Threatened

SSC - Species of Special Concern

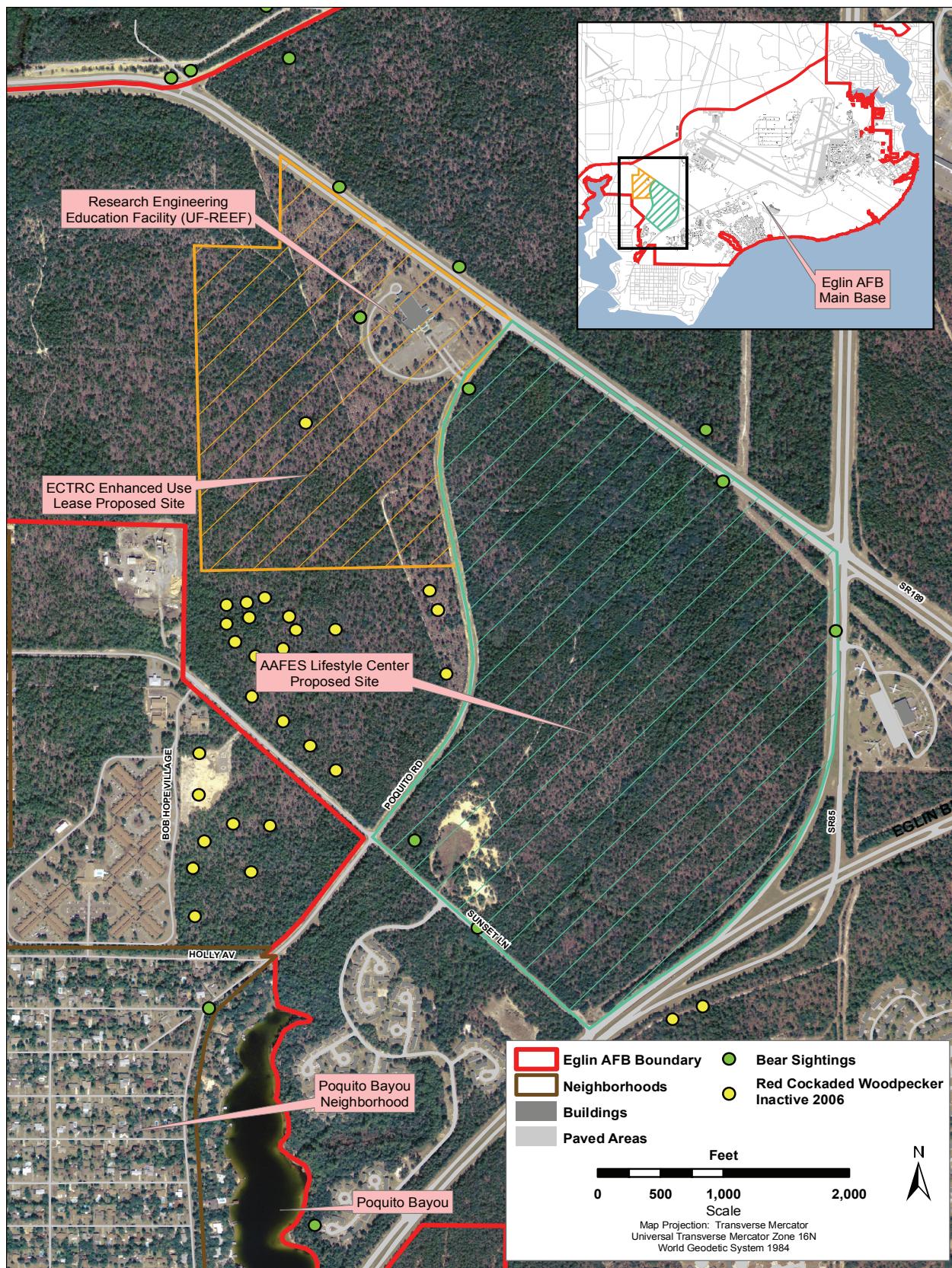
MC - Not currently listed, but of Management Concern to USFWS

The red-cockaded woodpecker is a federally endangered and state-listed as threatened species. Its ideal habitat is pine flatwoods, a habitat dominated by longleaf pines, which lacks a hardwood understory. This habitat is a fire-dependent ecosystem, which requires burning to maintain an open plant community of pines, grasses, and herbs (EAFB 2002).

The red-cockaded woodpecker excavates nesting cavities in mature longleaf pine trees with an age of 85 years or greater (EAFB 2008b). The proposed site does not contain active or inactive cavity nests. **Figure 3-5** shows the locations of inactive red cockaded woodpecker nests in the vicinity of the proposed site. This was determined in December 2006 when a biological survey was completed of this area for the Military Housing Privatization Initiative Environmental Impact Statement. At that time it was determined that the habitat was degraded and not suitable for the species (Miller 2008). There are active cavity nests on Eglin AFB, but it is not likely that the red-cockaded woodpecker would be found foraging in the proposed site due to the degraded nature of the pine flatwoods habitat, caused by a lack of fire and the resulting overgrown understory (EAFB 2008c and Miller 2008).

The Southeastern American kestrel is state-listed as threatened. Nest sites for the kestrel are tall dead trees or utility poles with an unobstructed view of surroundings. Sandhill habitats seem to be preferred but the kestrel can occur in flatwoods settings, with open areas of grass or bare ground to allow for the easy detection of prey. A key habitat feature necessary for breeding is a suitable cavity tree (FNAI 2001). Cavity trees are usually excavated in large pines and oaks by various woodpeckers, such as the red-cockaded woodpecker.

The gopher tortoise is listed by the State of Florida as a state threatened species. It requires sandy, open scrub habitats. Gopher tortoise burrows serve as important habitat for many species, including the federally listed Eastern indigo snake (EAFB 2008b). One gopher tortoise burrow was found on the proposed site during the FNAI survey, which was completed in Fall 2006 (Miller 2008 and FNAI 2006). A field survey of the proposed area would be conducted for gopher tortoise burrows prior to construction activities.



Source of Base Data: Eglin AFB, 2007

**Figure 3-5. Biological Resources Constraints Relative to the Proposed Site**

The Florida black bear is listed as a state threatened species except in Baker and Columbia counties and Apalachicola National Forest. Most Florida black bears within Eglin AFB use the large swamps and floodplain forests in the southwestern and northern portions of the base. Black bear sightings have occurred at numerous locations throughout the base, the majority along roadway corridors, including five sightings along the periphery of the proposed site (Seiber 2007). **Figure 3-5** shows the bear sightings in and around the Proposed Lifestyle Center site.

The pineland hoary-pea is state-listed as threatened and has been documented on the proposed site. It requires sandhill and scrub habitat (FNAI 2006). The pineland hoary-pea was found on the proposed site during the 2006 FNAI survey (Miller 2008).

**Wetlands and Other Waters of the United States.** An unnamed drainage flows from the north to south through the proposed site, along the western site boundary, into Poquito Bayou. Another unnamed drainage flows north to south along the east-central portion of the site toward Sunset Lane. There is also a drainage pipe and culverts running from the north side of SR 189 that empty into a ditch and onto the northwestern corner of the proposed site.

### **3.6.3 Environmental Consequences**

#### **Evaluation Criteria**

The significance of effects on biological resources is based on the following:

1. Importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource
2. Proportion of the resource that would be affected relative to its occurrence in the region
3. Sensitivity of the resource to proposed activities
4. Duration of ecological effects.

Ground disturbance and noise associated with construction activities might directly or indirectly cause potential adverse effects on biological resources. Effects from ground disturbance were evaluated by identifying the types and locations of potential ground-disturbing activities in correlation to important biological resources. Mortality of individuals, habitat removal, and damage or degradation of habitats might be effects associated with ground-disturbing activities.

Noise associated with the Preferred Alternative might be of sufficient magnitude to result in the direct loss of individuals and a reduction in reproductive output within certain ecological settings. To evaluate effects, consideration was given to the number of individuals or critical species involved, amount of habitat affected, relationship of the Area of Potential Effect (APE) to total available habitat within the region, type of stressors involved, and magnitude of the effects.

As a requirement under the ESA, Federal agencies are required to provide documentation that ensures that agency actions would not adversely affect the existence of any federally threatened or endangered species. The ESA requires that all Federal agencies avoid “taking” threatened or endangered species, which includes jeopardizing threatened or endangered species habitat. Section 7 of the ESA requires a consultation process between USFWS and National Marine Fisheries Service, in which both agencies determine the risk of jeopardy which is presented by a Federal agency project.

#### **Preferred Alternative**

**Vegetation.** Construction of the proposed Lifestyle Center would have direct long-term moderate adverse effects on approximately 100 acres of sand-pine, scrub brush, and longleaf pine woodland due to its

permanent loss. Long-term indirect moderate adverse effects on adjacent vegetation could result from collision with construction equipment and root damage.

BMPs, such as installing temporary fences around trees, would be implemented during construction activities. A total of 24 acres out of the 100 acres would be used for landscaping or preservation of the original vegetation including older longleaf pine trees, which would be flagged prior to construction. Replanting using native vegetation or approved grass mixtures would be required following construction activities.

Disturbance to soil and vegetation from land clearing and construction could enhance conditions for the establishment and spread of invasive nonnative plant species. Because the majority of the project area would be covered by buildings, pavement, or landscaped areas, areas with the proper environment for the establishment of invasive nonnative plants would be minimal. Additionally, all landscaping and plantings of vegetation would conform to the Presidential Memorandum dated 26 April 1994, *Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds*, and Executive Order 13112, *Invasive Species*, both of which require the planting of regional natives in landscaping. Mitigations available to reduce the potential for invasive nonnative species infestations are:

- To reduce potential seed sources, treat areas with known invasive nonnative species problems.
- To avoid spreading invasive nonnative species, do not drive vehicles in areas with known invasive non-native species problems. If a vehicle is driven in such an infested area, clean the vehicle before it is driven to a non-infested area.
- Use only native plants for landscaping.

Impacts from invasive nonnative plant species to biological resources would not be significant under any of the alternatives.

**Wildlife.** Direct short- and long-term moderate adverse effects would be expected on wildlife species presently inhabiting the proposed site. These species would be expected to relocate to adjacent similar and undeveloped habitats during and following construction. Some wildlife species adapted to urban development and noise levels associated with aircraft and other sources common on Eglin AFB would be expected to move back into the area after the development of the Lifestyle Center (EAFB 2008c). Some species would be forced to relocate permanently because of the reduction in suitable habitat resulting from development of the proposed Lifestyle Center. Direct long-term adverse effects could occur to smaller, less-mobile species on the site as a result of mortality associated with collision with construction equipment.

BMPs such as stopping construction activities when wildlife is encountered would be implemented to allow less-mobile species to avoid effects from construction equipment. Additional BMPs include providing educational materials and briefing construction personnel on the potential species that might be encountered. These BMPs would also be implemented to avoid effects on wildlife in the vicinity of the construction activities.

**Protected or Sensitive Species.** Consultation with USFWS under Section 7 of the ESA is not required because there are no federally protected species present in the proximity of the proposed site of the Lifestyle Center. The Eglin AFB NRS, having reviewed the FNAI biological survey in 2006 and Eglin AFB's extensive GIS database for federally listed species, has determined that the Preferred Alternative would have no effect on federally listed species. The Eglin AFB Natural Resources Section (NRS) has, therefore, indicated that no consultation with the USFWS or the NMFS would be required under the

Preferred Alternative (Miller 2008). Field surveys would be conducted for the red-cockaded woodpecker, eastern indigo snake, gopher tortoise, and Florida black bear prior to construction (Miller 2008).

Although a no effect determination has been indicated by Eglin AFB NRS staff for federally threatened or endangered species, there is always the potential to encounter isolated occurrences. In order to avoid impacts to isolated occurrences of Eastern indigo snake, the USFWS Standard Protection Measures for the Eastern indigo snake (USFWS 2005) would be followed prior to and during construction. Implementation of these measures would minimize potential for adverse effects. The protection measures are as follows:

1. The development of an eastern indigo snake protection/education plan for all construction personnel to follow. The plan would be provided to the USFWS for review and approval at least 30 days prior to any clearing activities. The educational materials for the plan would consist of a combination of posters, videos, pamphlets, and lectures (e.g., an observer trained to identify Eastern Indigo snakes could use the protection/education plan to instruct construction personnel before any clearing activities occur). Informational signs would be posted throughout the construction site and contain the following information:
  - a. Description of the eastern indigo snake, its habits, and protection under Federal Law
  - b. Instructions not to injure, harm, harass, or kill this species
  - c. Directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming clearing
  - d. Telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is encountered. The dead specimen should be thoroughly soaked in water and then frozen.
2. Only an individual who has been either authorized by a section 10(a)(1)(A) permit issued by the USFWS, or designated as an agent of the State of Florida by the Florida Fish and Wildlife Conservation Commission (FWC) for such activities, is permitted to come in contact with or relocate an eastern indigo snake.
3. If necessary, eastern indigo snakes shall be held in captivity only long enough to transport them to a release site; at no time shall two snakes be kept in the same container during transportation.
4. An eastern indigo snake monitoring report must be submitted to the appropriate Florida Field Office within 60 days of the conclusion of clearing phases. The report should be submitted whether or not eastern indigo snakes are observed. The report should contain the following information:
  - a. Any sightings of eastern indigo snakes
  - b. Summaries of any relocated snakes if relocation was approved for the project (e.g., locations of where and when they were found and relocated)
  - c. Other obligations required by the FWC, as stipulated in the permit.

Although there is always a small possibility of encountering transient occurrences of red cockaded woodpecker foraging or roosting in proximity to the proposed site, there are currently no active or inactive red-cockaded woodpecker cavities at the proposed site. The site has degraded habitat potential for the red-cockaded woodpecker due to the exclusion of fire and the invasion of the site by mid-story oaks and sand pines (Miller 2008). The site itself, while in the potential forage range of active colonies, has only a scattered number of longleaf pines and has a marginal value for use as a foraging habitat (Miller 2008). Therefore, even isolated encounters are unlikely.

Negligible short-term adverse effects on the southeastern American kestrel could occur on transient individuals foraging or roosting in proximity to the project area, as a result of noise and other disturbances associated with construction. It is anticipated that there are some suitable nesting trees on the proposed site. It is preferred that clearing of potential nesting trees be avoided during kestrel breeding season and that a site survey be completed prior to construction. Additionally, cavity trees, if discovered, would be surveyed for nests and avoided if possible (Miller 2008).

Potential long-term minor adverse effects on the gopher tortoise could occur as a result of impacts associated with construction and long-term operational activities. Incidental contact with personnel and equipment could result in trampling or crushing of individuals or their burrows. If a gopher tortoise burrow is identified within the proposed path of construction, NRS personnel would investigate the burrow, a relocation permit would be purchased by the construction contractor, and NRS personnel would relocate any gopher tortoise or commensals that might be occupying the burrow.

BMPs would include a briefing with construction personnel, and educational materials would be provided on the gopher tortoise. In the event that construction personnel come into contact with a gopher tortoise, all activities would cease until the tortoise has moved away from the area (Seiber 2007).

Potential short-term minor adverse effects on the Florida black bear could occur as a result of incidental contact with the animal resulting in a disruption of its normal behavioral habits. Additional long-term minor adverse effects could occur as a result of loss of foraging habitat and segmentation of travel corridors. In the event that construction personnel come into contact with a black bear, all activities would cease until the bear has moved away from the area (Seiber 2007).

Potential long-term minor adverse effects on the pineland hoary-pea could occur as a result of removal associated with construction activities. Additional direct minor adverse effects could occur as a result of trampling during construction activities.

In addition, the Proposed Action would potentially impact 24.1 acres of migratory bird habitat and has the potential to cause adverse impacts to the resource. To avoid impacts to migratory birds, land clearing should occur from September 1 through March 15 to avoid the nesting season. The Migratory Bird Treaty Act (MBTA) does not contain any prohibition that applies to the destruction of a migratory bird nest alone (without birds or eggs), provided that no possession occurs during the destruction (USFWS 2005). If clearing occurs before September 1, care would be taken to leave snags in place. If snags need to be removed for construction purposes, they may be removed after September 1. Coordination with 96 CEG/CEVSN is required prior to project initiation to ensure compliance with the MBTA.

***Wetlands and Other Waters of the United States.*** Negligible long-term direct and short-term indirect effects on wetlands or other waters of the United States could occur. A survey for the occurrence and extent of wetlands or others waters of the United States has not been conducted on the proposed site. However, based on a review of existing information and a site reconnaissance conducted in June 2008 by Eglin AFB personnel, there is a potential for wetlands or other waters of the United States, that are jurisdictional under Section 404 of the CWA, to occur on the project site. Therefore, a jurisdictional determination of these features is recommended. If wetlands or other waters of the United States are identified, then a jurisdictional wetland delineation should also be conducted, in coordination with the USACE. Permits would need to be acquired under Section 404 of the CWA prior to conducting activities with the potential to cause adverse impacts on the habitats, such as the discharge of dredge and fill material.

Pursuant to Section 404 of the CWA, adverse effects on jurisdictional wetlands and other waters of the United States must be avoided or minimized to the maximum extent practicable. CWA Section 404

permits and Section 401(a) water quality certifications must be obtained, as required, for unavoidable impacts on jurisdictional waters of the United States. Mitigation would likely be required to compensate for unavoidable impacts. In addition, EO 11990 and USAF policy require the avoidance of all wetlands, regardless of whether the wetland is jurisdictional or not. Under the U.S. government's no net loss policy, any loss or degradation of wetlands would need to be compensated for.

Construction activities could result in a potential increase in surface runoff due to sheet flow over increased impervious surfaces and a potential increase in erosion and sedimentation. Implementation of properly designed and maintained erosion and sediment controls and storm water management practices during construction would minimize the potential for any adverse effects on wetlands or other waters of the United States occurring in proximity to the Preferred Alternative. Implementation of BMPs under a site-specific ERP, and either the Eglin AFB or Okaloosa County MS4 storm water management plans, would minimize the potential for adverse effects associated with runoff from the proposed Lifestyle Center. In addition, ERP Phase II rules for local level wetland regulation are in the final stages of development. ERP Phase II would supplement the current storm water regulations with new regulations for activities that occur in, on, or over wetlands and other local surface waters. The implementation date for full ERP is tentatively scheduled for January 2009. Implementation of Phase II of the ERP Program would further minimize potential for adverse effects on wetlands or other waters of the United States associated with increased storm water runoff both during and following site development.

### **Commissary Alternative**

**Vegetation.** The effects on vegetation would be expected to be slightly more adverse with the Commissary Alternative compared with the Preferred Alternative. There would be direct moderate long-term adverse effects on an extra 7.5 acres of vegetation, because of the extra retail space and pavement for parking that it proposes.

**Wildlife.** The effects on wildlife would be expected to be the same, or slightly more adverse, with the Commissary Alternative compared to the Preferred Alternative because the location of the alternatives are the same, but the footprint of the proposed construction under this alternative would be larger. The Commissary would add approximately 7.5 acres to the project footprint.

**Protected or Sensitive Species.** The effects on protected or sensitive species would be expected to be the same, or potentially slightly more adverse, with the Commissary Alternative compared to the Preferred Alternative because the location of the alternatives are the same, but the footprint of the proposed construction under this alternative would be larger. The Commissary would add approximately 7.5 acres to the project footprint.

**Wetlands.** The effects on wetlands would be expected to be the same, or slightly more adverse, with the Commissary Alternative compared to the Preferred Alternative because the location of the alternatives are the same, but the footprint of the proposed construction under this alternative would be larger. The Commissary would add approximately 7.5 acres to the project footprint.

### **No Action Alternative**

Under the No Action Alternative, the proposed AAFES Lifestyle Center would not be constructed and existing conditions would remain as described in **Section 3.6.2**. No effects on biological resources would be expected.

## 3.7 Cultural Resources

### 3.7.1 Definition of the Resource

Cultural resources are defined under the NHPA as prehistoric or historic sites, districts, structures, buildings, objects, or features that are made or modified in the course of human activities and resources of traditional, religious, or cultural significance to Native American tribes. Typically, cultural resources are subdivided into the following categories:

- *Archaeological resources*, which comprise areas where human activity has measurably altered the earth or deposits of physical remains/materials resources are found (e.g., projectile points and bottles).
- *Architectural resources*, which include standing buildings, bridges, dams, and other structures of historic or aesthetic significance. Generally, architectural resources must be more than 50 years old to be considered eligible for the National Register of Historic Places (NRHP). More recent structures, such as Cold War-era resources, might be eligible for the NRHP (Criterion D) if they are considered to be of exceptional importance and have the potential to gain significance in the future. Historic districts have a significant concentration, linkage, or continuity of historic sites, buildings, structures, or objects united historically or aesthetically.
- *Traditional Cultural Properties (TCP) and Sacred Sites (SS)*, which are resources eligible for inclusion in the NRHP because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. TCPs can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that communities consider essential for the preservation of traditional culture.

The proposed undertaking involves only onshore components, therefore pertinent authorities and guidelines applicable to cultural resources are AFI 32-7065, *Cultural Resources Management*; the NHPA (1966); the Archaeological and Historic Preservation Act (1974); the American Indian Religious Freedom Act (1978); the Archaeological Resources Protection Act (ARPA) (1979); the Native American Graves Protection and Repatriation Act (NAGPRA) (1990); EO 11593, *Protection and Enhancement of the Cultural Environment*; and the Florida Historical Resources Act (Chapter 267, F.S., rev. 2004).

The NHPA includes a number of directives to Federal agencies, the primary of which are subsumed under Section 106 (16 U.S.C. 470f) which states:

*"The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation...a reasonable opportunity to comment with regard to such undertaking."*

In short, Section 106 (16 U.S.C. 470f), as codified under 36 CFR Part 800, requires Federal agencies to consider the effects of their undertakings only on historic properties prior to implementation. The term *historic properties* includes any architectural or archaeological resource that is eligible for inclusion in or

listed in the NRHP. The Section 106 process is designed to identify possible conflicts between historic preservation objectives and the proposed activity, and to resolve those conflicts in the public interest through consultation.

NAGPRA places affirmative duties on Federal agencies to protect, inventory, and rightfully dispose of Native American cultural items, both those in existing collections and those that might be discovered in the future. Under NAGPRA, Eglin AFB must consult with appropriate American Indian tribes prior to authorizing the intentional removal of Native American human remains and funerary objects found with them. A cultural resources use permit or equivalent documentation is generally required before human remains and artifacts covered by the Act may be excavated or removed from Federal lands. Permit-related notification and consultation, if requested, are required by ARPA Sec.4 and 43 CFR 7.7. Consultation for NAGPRA purposes must occur before the excavation or removal of human remains and cultural items may be authorized. Where there is a reasonable likelihood of encountering undetected cultural items during a proposed land use, agreements should be negotiated with tribes or groups before the project is authorized to provide general guidance on treatment of any cultural items that might be exposed.

NEPA and Section 106 processes require an assessment of the potential impact of an undertaking on historic properties that are within the project's APE. The APE is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist." The APE for the current undertaking for archaeological resources is the footprint of the building, parking lot areas, and open green space areas along with any linear corridors representing construction of infrastructure, such as roads and utilities. The APE for architectural resources includes not only the construction footprint, but also the viewshed of surrounding historic buildings and structures. The APE for TCPs and SSs includes both those areas that would be impacted directly by ground disturbance as well as the viewshed and general setting of those resources.

### **3.7.2 Description of the Affected Environment**

***Archaeological Resources.*** As of the 2004 Integrated Cultural Resources Management Plan (ICRMP) for Eglin AFB, 153,317 acres of the total 464,000 acres were inventoried on Eglin AFB-managed terrestrial lands and a total of 1,930 archaeological sites were recorded (EAFB 2004). The ICRMP includes a detailed discussion of the many archaeological investigations that have been completed at Eglin AFB over the past century, along with a thorough reconstruction of historic developments in the Eglin region based on archaeological work and archival research, which assists in assessing the archaeological sensitivity of unsurveyed areas.

Several cultural resources investigations have occurred in or near the vicinity of the proposed undertaking. In July 1991, New World Research, Inc., was asked by Woodward-Clyde Federal Services to conduct Phase I cultural resources investigations over a 110-acre tract at Eglin AFB scheduled for development as the University of Florida Research Engineering Education Facility (UF-REEF) (WCFS 1991). The tract is located immediately west of and adjacent to the proposed site. No significant or potentially significant cultural resources were located. Please see **Appendix H** for report excerpts.

In 2002, Prentice Thomas and Associates, Inc. (PTA, Inc.) was tasked by Eglin AFB to provide a cultural resources survey of X-636, a 527-acre tract that encompasses the proposed site (EAFB undated). Two sites (8OK1835 and 8OK1836) and two isolated finds were identified as a result of the effort. The sites were identified as late 19th- to early 20th-century historic homesteads, although both might be part of a single larger industrial occurrence that was operational after the homesteads were sold. The sites were recommended potentially eligible for the NRHP. The Florida Division of Historical Resources concurred with the sites' eligibility recommendations Please see **Appendix H** for report recommendations (Florida

DHR correspondence unavailable). In 2007, PTA, Inc., revisited 8OK1835 and completed a surface examination and collection in advance of the removal of surface contaminants by the Environmental Restoration Program (EAFB 2007b). No subsurface investigation was conducted as part of the work. Site 8OK1835, was identified through chain of title research as the late 19th-to early 20th-century Manuel Brown homestead. As a result of the effort, the boundaries of the artifact concentration were refined and two new artifact concentrations were encountered. The Florida Division of Historic Resources concurred with the report findings (Gaske 2007). Please see **Appendix H** for report recommendations and Florida DHR letter of concurrence.

**Architectural Resources.** Eglin AFB has two historic districts consisting of 67 eligible structures. The Eglin Field Historic District, which was listed in 1998, contains 22 World War II structures whose original purpose was primarily officers' housing, with some administrative facilities. The McKinley Climatic Lab (Building 440) was built in 1947 and is the largest climatic lab in the world. The lab was listed on the NRHP in 1997, and it is also a Historical Mechanical Engineering Landmark. The Camp Pinchot Historic District contains 13 structures dating from 1908 which served as the headquarters for U.S. Forest Service personnel stationed in the Choctawhatchee National Forest. It was listed on the NRHP in 1998.

If construction is proposed immediately adjacent to, or within, one of Eglin's historic districts, plans must conform to the Secretary of the Interior's Standards and Guidelines, and would be developed in consultation with the State Historic Preservation Office (SHPO) to ensure detrimental visual effects are not introduced to the district. However, the historic districts are not located in or near the proposed undertaking, and no other standing historic structures, historic districts, or historic cemeteries are located within or peripheral to the area.

**Traditional Cultural Properties.** The Eglin AFB ICRMP identifies four federally recognized tribes who claim cultural affiliation to Eglin AFB. The four tribes are the Miccosukee Tribe of Indians of Florida; the Seminole Tribe of Florida; the Poarch Band of Creek Indians of Alabama; and the Muskogee (Creek) Nation of Oklahoma. At present, no traditional resources, sacred sites, or spiritual areas have been identified on the installation. However, should any TCPs or SSs be identified, they must be treated as historic properties and any mitigation efforts developed in consultation with tribal representatives.

### **3.7.3 Environmental Consequences**

#### **Evaluation Criteria**

This section evaluates the potential effects on historic properties under the Preferred Alternative, Commissary Alternative, and the No Action Alternative. Because no significant architectural resources and no TCPs have been identified within the APE for the undertaking, the only resources to be considered in this discussion are the two eligible archaeological sites (18KO1835 and 18KO1836). Effects (i.e., impacts) on cultural resources are defined as "alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register" (36 CFR 800.16(i)). Potential impacts on archaeological sites might include disturbance of the physical remains or objects or other elements of an archaeological site, including sites or objects of religious or cultural importance to Native Americans. There are three types of effects when considering historic properties. These include "No historic properties affected," which applies when there are no historic properties present or there are historic properties present but the undertaking would have no effect upon them; "No adverse effect," which means that there is a direct or indirect effect on a historic property, but the effect does not diminish the qualities that make the property significant; and "Adverse effect," which "is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property

for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, and association" (36 CFR 800 5(a)(1)).

### **Preferred Alternative**

**Archaeological Resources.** Depending upon the exact location of construction activities, soil disturbance associated with the Preferred Alternative would have a direct adverse impact on the two eligible sites (8OK1835 and 8OK1836) within the northern portion of the property. Historical sites are usually within the upper soil layers, so these sites could not avoid destruction. The preferred mitigation of adverse impacts is avoidance and the construction of protective fencing around the two sites. Avoidance not only preserves the integrity of a resource but also avoids the high costs and potential construction delays associated with data recovery. Depending upon the effective protection provided by a fence, long-term cumulative impact to the sites could occur from removal of artifacts, which would impact the cultural and historical setting of Eglin AFB. If avoidance is not chosen, data recovery of the two archaeological sites would be necessary under this alternative, as per Eglin AFB's current Programmatic Agreement regarding "Preservation and Protection of Historic and Archaeological Resources Located at Eglin AFB, Florida" (AAC 2003a) Either avoidance or data recovery requires consultation with the Florida Division of Historic Resources and 96 CEG/CEVH to resolve adverse effects prior to proceeding with the undertaking and to properly comply with Section 106 of the NHPA.

Although the APE has been previously surveyed and cultural resources have been identified, it is possible that the Preferred Alternative might result in an inadvertent discovery of archaeological artifacts. In the event of a discovery during construction, all work in the immediate vicinity of the discovery would be halted and 96 CEG/CEVH would be notified. Construction work would continue once the resources are identified and evaluated. If determined eligible for the NRHP, an appropriate mitigation strategy to resolve adverse effects should be developed in consultation with the SHPO and 96 CEG/CEVH prior to proceeding with the undertaking. As outlined in the ICRMP, and in compliance with Federal laws (ARPA, NAGPRA, and NHPA), concerned tribal representatives would be notified and consulted about the proposed treatment of human remains, and funerary and sacred objects should these be discovered during implementation of the Preferred Alternative.

**Architectural Resources.** Under the Preferred Alternative, no significant architectural resources would be affected.

**Traditional Cultural Properties.** Under the Preferred Alternative, no adverse effect on TCPs or SSs would be expected. In the event of an inadvertent discovery of human remains during construction, all work in the immediate vicinity of the discovery would be halted until the resources are identified and evaluated and an appropriate mitigation strategy developed in consultation with the Florida Division of Historic Resources and 96 CEG/CEVH. As specified in the ICRMP and in compliance with Federal laws (i.e., APRA, NHPA, and NAGPRA), concerned tribal representatives would be notified and consulted about the proposed treatment of human remains should these be discovered.

### **Commissary Alternative**

This alternative is identical to the Preferred Alternative, with the addition of the Commissary and associated parking spaces as part of the AAFES Lifestyle Center. Thus, the potential impacts are the same for both the Preferred Alternative and Commissary Alternative for archaeological and architectural resources and for TCPs.

## No Action Alternative

The No Action Alternative would result in continuation of the existing condition. The affected environment would remain unchanged from what was described in **Section 3.8.2** for archaeological and architectural resources, and TCPs.

## 3.8 Socioeconomic Resources and Environmental Justice

### 3.8.1 Definition of the Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Regional birth and death rates and immigration and emigration affect population levels. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these fundamental socioeconomic indicators are typically accompanied by changes in other components, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

Data in three areas provide key insights into socioeconomic conditions that might be affected by a proposed action. Data on employment identify gross numbers of employees, employment by industry or trade, and unemployment trends. Data on personal income in a region can be used to compare the “before” and “after” effects of any jobs created or lost as a result of a proposed action. Data on industrial or commercial growth or growth in other sectors provide baseline and trend line information about the economic health of a region.

In appropriate cases, data on an installation’s expenditures in the regional economy help to identify the relative importance of an installation in terms of its purchasing power and jobs base.

Demographics identify the population levels and changes in population levels of a region. Demographics data might also be obtained to identify, as appropriate to evaluation of a proposed action, a region’s characteristics in terms of race, ethnicity, poverty status, educational attainment level, and other broad indicators.

Socioeconomic data shown in this section are presented at metropolitan, county, and state levels to characterize baseline socioeconomic conditions in the context of regional and state trends. Data have been collected from previously published documents issued by Federal, state, and local agencies; and from state and national databases (e.g., U.S. Census Bureau).

**Environmental Justice.** There are no Federal regulations on socioeconomics, but there is one EO that pertains to environmental justice issues. This EO is addressed in this section because it relates to various socioeconomic groups and the health effects that could be imposed on them. On 11 February 1994, President Clinton issued EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO requires that Federal agencies’ actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. The EO was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns includes race,

ethnicity, and the poverty status of populations in the vicinity of a proposed action. Such information aids in evaluating disproportionate adverse effects from the Preferred Alternative and alternatives.

**Protection of Children from Environmental Health and Safety Risk.** EO 13045 establishes the President's Task Force on Environmental Health Risks and Safety Risks to Children. The Task Force reports to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget. The Task Force recommends to the President Federal strategies for approaching children's environmental health and safety issues within the limits of the Administration's budget, coordinates research agendas, identifies threats to children's health, proposes increases in public outreach, and states the desirability of new legislation. This task force identified four priority areas for immediate attention: asthma, unintentional injuries, developmental disorders (including lead poisoning), and cancer.

### 3.8.2 Description of the Affected Environment

The Eglin AFB reservation is within portions of Okaloosa, Santa Rosa, Walton, and Gulf counties, and the Main Base is approximately 1 mile southwest of Valparaiso, Florida. Florida had an estimated population in 2007 of 18,251,243. Okaloosa County, Santa Rosa County, Walton County, and Gulf County had estimated populations in 2007 of approximately 181,499, 147,044, 52,881, and 13,332, respectively. It is estimated that the populations of Okaloosa County, Santa Rosa County, and Walton County increased by approximately 6.5, 24.9, and 30.3 percent, respectively, between 2000 and 2007 (U.S. Census Bureau 2007). Eglin AFB directly employs more than 13,859 military personnel and approximately 8,574 civilians. Eglin AFB also supports 45,162 retired military members that reside in the local area around the base in Okaloosa and Santa Rosa counties. Okaloosa County is home to more than 300 government contractors. The direct economic effect of Eglin AFB on the local area is estimated to be about \$1.7 billion annually. In addition to the 33,470 military and civilian jobs at Eglin AFB, it is estimated that the base indirectly creates an additional 11,981 local jobs valued at an estimated \$409 million. The base itself is responsible for \$187 million in local contract expenditures (EAFB 2007a).

For this analysis, the socioeconomic baseline is presented using three levels of comparison: the ROI; the counties of Okaloosa, Santa Rosa, and Walton (referred to as the Tri-County Area); and the State of Florida. Census data from the year 2000 was used, as it is the most recent year in which comprehensive data are available for all of the areas of comparison (including the census tracts) under analysis. The region of Influence (ROI) was defined by identifying census tracts that composed Eglin AFB and areas immediately adjacent to installation property. Census tracts 108.02, 208, and 950.3 were defined as the region of influence (ROI) (see **Figure 3-6**). Okaloosa, Santa Rosa, and Walton counties include Eglin AFB and the surrounding areas where effects from each alternative would be most evident. The Tri-County Area includes the population within the ROI, along with major residential and commercial centers around Eglin AFB. Between 1990 and 2000, Florida's population increased by 11 percent. In the same period of time, the Tri-County Area and the ROI grew by 30 percent and 18 percent, respectively (U.S Census Bureau 2000).

**Employment Characteristics.** **Table 3-10** shows the type of employment by industry for residents in the Eglin AFB ROI, the Tri-County Area, and the State of Florida. A large portion of the residents in the Tri-County Area and Florida are employed in education, health, social services, and retail trade. As would be expected, there is a larger portion of the population in the ROI employed in the Armed Forces (54.2 percent), compared to the Tri-County Area and the State of Florida at 10.5 percent and 0.5 percent, respectively (U.S Census Bureau 2000).

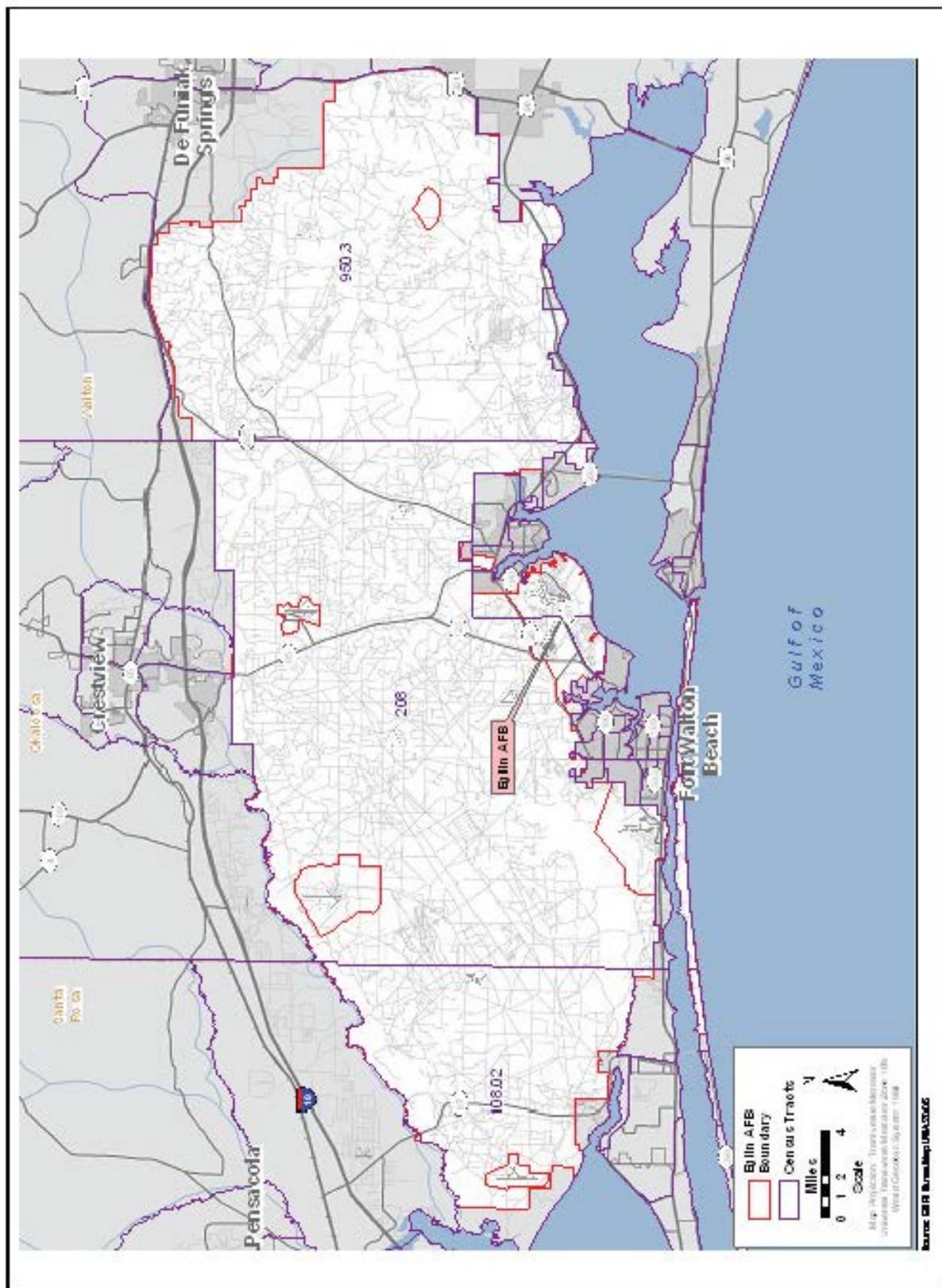


Figure 3-6. Census Tracks in the Socioeconomic ROI

**Table 3-10. Overview of Employment by Industry**

Employment by Industry	ROI <sup>1</sup>	Tri-County Area, Florida <sup>2</sup>	State of Florida
Percent of Employed Persons in Armed Forces	54.2%	10.5%	0.5%
<b>Industry of Civilian Labor Force</b>			
Agriculture, forestry, fishing and hunting, and mining	< 0.1%	0.6%	1.3%
Construction	1.0%	7.9%	8.0%
Manufacturing	0.8%	6.0%	7.3%
Wholesale trade	< 0.1%	1.3%	4.0%
Retail trade	8.1%	11.7%	13.5%
Transportation and warehousing, and utilities	2.0%	4.5%	5.3%
Information	1.1%	1.2%	3.1%
Finance, insurance, real estate, and rental and leasing	1.3%	5.7%	8.1%
Professional, scientific, management, administrative, and waste management services	10.1%	9.6%	10.6%
Educational, health, and social services	12.7%	19.1%	18.1%
Arts, entertainment, recreation, accommodation, and food services	4.0%	10.3%	10.5%
Other services (except public administration)	1.4%	3.8%	5.1%
Public administration	7.4%	8.5%	5.2%

Source: U.S Census Bureau 2000

Notes:

<sup>1</sup>The ROI consists of the U.S. Census Tracts encompassing Eglin AFB (Tracts 108.02, 208, and 950.3).

<sup>2</sup> The Tri-County Area consists of Okaloosa, Santa Rosa, and Walton counties.

**Environmental Justice and Protection of Children.** Minority and low-income populations were characterized within the Eglin AFB ROI, the Tri-County Area, and Florida to establish a baseline for environmental justice analysis. The three census tracts identified as the Eglin AFB ROI (Tracts 108.02, 208, and 950.3) were evaluated for disproportionately low-income or minority populations compared to Okaloosa County and the State of Florida. As shown in **Table 3-11**, the ROI has a higher percentage of African Americans (14.2 percent) as compared to the Tri-County Area (7.1 percent), but slightly lower than the State of Florida (14.6 percent). The Eglin AFB ROI has a lower median household income (\$37,042) than the Tri-County Area (\$40,500) but only slightly lower than the State of Florida (\$38,819) (U.S Census Bureau 2000).

In 2000, the unemployment rate in the Eglin AFB ROI (5.0 percent) was higher than both Florida (3.2 percent) and the Tri-County Area (2.8 percent). As shown in **Table 3-11** residents within the Eglin AFB ROI have a lower median household income compared to the Tri-County Area and the State of Florida. Yet fewer individuals in the Eglin ROI live below the poverty line (4.5 percent) compared to the Tri-County Area (9.5 percent) or the State of Florida (9.0 percent) (U.S. Census Bureau 2000).

**Table 3-11. Race and Poverty Characteristics**

	ROI <sup>1</sup>	Tri-County Area, Florida <sup>2</sup>	State of Florida
Total Population	8,082	328,842	15,982,378
Percent White	71.8%	86.6%	78.0 %
Percent Black or African American	14.2%	7.1%	14.6%
Percent American Indian, Eskimo, or Aleut	0.5%	0.8%	0.3%
Percent Asian	3.0%	1.8%	1.7%
Percent Native Hawaiian and Other Pacific Islander	0.5%	0.1%	0.1%
Percent reporting some other race	3.0%	1.0%	3.0%
Percent reporting 2 or more races	4.2%	2.5%	2.4%
Percent Unemployment	5.0%	2.8%	3.2%
Percent families below poverty	4.5%	9.5%	9.0%
Median Household Income	\$37,042	\$40,500	\$38,819

Source: U.S. Census Bureau 2000

Notes:

<sup>1</sup> The ROI consists of the U.S. Census Tracts encompassing Eglin AFB (Tracts 108.02, 208, and 950.3).

<sup>2</sup> The Tri-County Area consists of Okaloosa, Santa Rosa, and Walton counties.

### 3.8.3 Environmental Consequences

#### Evaluation Criteria

Construction expenditures are assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential effects can vary greatly, depending on the location of a proposed action. For example, implementation of an action that creates ten employment positions might go unnoticed in an urban area, but could have considerable effects in a rural region. If potential socioeconomic changes were to result in substantial shifts in population trends or a decrease in regional spending or earning patterns, those effects would be considered adverse. A proposed action could have a significant effect with respect to the socioeconomic conditions in the surrounding ROI if the following were to occur:

- Change the local business volume, employment, personal income, or population that exceeds the ROI's historical annual change
- Adversely affect social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates.
- Disproportionately affect minority populations, low-income populations, or children.

#### Preferred Alternative

The Preferred Alternative would result in minor to moderate beneficial effects on socioeconomic resources. The Lifestyle Center would result in short- and long-term increases in civilian employment opportunities. The ROI does not have a disproportionate number of minority or low-income populations;

therefore no environmental justice issues would be expected. It is not anticipated that construction of the proposed facility would require unusual procedures, materials, or equipment. Therefore, there are no anticipated environmental effects of the Proposed Action that would disproportionately affect small children.

The Preferred Alternative would add 850 new jobs to the local economy as employees of the new stores and facilities at the Lifestyle Center (EAFB 2008a). Construction would have direct minor short-term beneficial effects on the local economy and local employment levels. Direct expenditures for the Lifestyle Center, which would be paid for by the developer, are estimated to be \$100 to \$120 million dollars. Indirect expenditures from the construction activities would have additional beneficial effects on the local economy. It is estimated that construction activities would include 1 to about 8 percent of the labor force in the ROI and Tri-County Area. Therefore, it is anticipated that the financial benefits would stay within the ROI and the Tri-County Area.

Since the Lifestyle Center would be constructed to combine AAFES and other retail facilities on Eglin AFB, the Main Base Exchange, Food Court, Concessionaires, Class Six, Day Spa/Dry Cleaners, and the Military Clothing Store from the Mini-Mall would all relocate from their current locations. Having the facilities in close proximity would be a more efficient use of the available land, and would create a more convenient shopping experience for area consumers. This also creates 149,487 ft<sup>2</sup> of new usable administrative and storage space on Eglin AFB, eliminating the unnecessary costs of having to expand such facilities at a future date (EAFB 2006 and EAFB 2008b).

Indirect effects from the proposed construction projects are expected to be both short- and long-term and beneficial on the local economy and employment. Indirect short-term moderate minor beneficial effects could include construction expenditures for building materials, construction workers wages and taxes, taxes created by the new retail outlets, and purchases of goods and services in the area. The long-term benefits include the addition of 850 new permanent jobs, and the increased tax base from the addition of new businesses to the Lifestyle Center. Therefore, short- and long-term beneficial effects are the expected results of the Preferred Alternative.

### **Commissary Alternative**

The Preferred Alternative would result in minor to moderate beneficial effects on socioeconomic resources. The proposed site under the Commissary Alternative would result in short- and long-term increases in civilian employment opportunities, as well as slightly larger short- and long-term direct and indirect construction impacts when compared to the Preferred Alternative.

The Commissary Alternative is in the same area of Eglin AFB as the Preferred Alternative and the site conditions are the same. The only difference would be the larger amount of construction proposed under the Commissary Alternative. Therefore, most of the socioeconomic consequences of moving the Commissary to the Lifestyle Center would be the same as those described for the Preferred Alternative.

The inclusion of the Commissary and Burger King in the Lifestyle Center under the Commissary Alternative would create another 108,648 ft<sup>2</sup> of space that would be available to convert into administrative and storage space. Under the Commissary Alternative, construction would last slightly longer as the new Commissary would require an additional 500 parking spots that translates into an additional 225,000 ft<sup>2</sup> (5 acres) of paving. Consequently, the direct and indirect short- and long-term construction benefits derived from these actions would be slightly higher than under the Preferred Alternative.

## No Action Alternative

Under the No Action Alternative, the existing socioeconomic conditions would not be affected, and the AAFES facilities would continue to occupy the current lease sites.

## 3.9 Traffic

### 3.9.1 Definition of the Resource

The transportation resource is defined as the system of roadways and highways that are in the vicinity of the proposed site and could reasonably be expected to be potentially impacted by the Preferred Alternative. These include SR 85, SR 189, and SR 397.

### 3.9.2 Description of the Affected Environment

The Eglin AFB Lifestyle Center proposed site is in Okaloosa County, Florida, in the vicinity of the west gate of Eglin AFB. It is bounded on the west by Poquito Road, on the northeast by SR 189, on the east and southeast by SR 85, and on the southwest by Sunset Lane. There is no existing access into the site although there is access to the west and southwest perimeter of the site through the full movement stop controlled intersection at Poquito Road/SR 189 and the three-quarter access stop controlled intersection of Sunset Lane/SR 85. SR 189 is classified as a minor arterial and is a 4-lane divided facility. SR 85 is classified as a principal arterial and is a 4-lane divided facility. SR 397 is classified as a minor arterial and is a 4-lane divided facility. Both Poquito Road and Sunset Lane act as collector roadways and are 2-lane undivided facilities. All intersections in the vicinity are stop controlled with the exception of the following:

- The intersection of SR 85/SR 397 is an interchange type of facility with no at-grade intersection
- The intersection of SR 85/SR 189 is an at-grade traffic signal controlled intersection.

Operational characteristics of roadway facilities are described in terms of level of service (LOS). The concept of LOS uses quantitative methods to develop a qualitative measure that characterizes operational conditions within a traffic stream and its perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. Six levels of service are defined and given letter designations A through F, with A being the best and F being the worst operating conditions. Most jurisdictions adopt a minimum LOS threshold for transportation facilities in urbanized areas of LOS C or D. The Florida Department of Transportation (FDOT) identifies the minimum LOS for SR 85, SR 189, and SR 397 as LOS D (FDOT 2002). **Table 3-12** below summarizes the existing characteristics of the transportation system and the existing LOS.

### 3.9.3 Environmental Consequences

#### Evaluation Criteria

The criteria used to evaluate transportation system operations is LOS. Please see **Section 3.9.2** for a description of LOS.

**Table 3-12. Existing Roadway Characteristics**

Facility	Classification	Type	Existing AADT*	Existing AADT* LOS
SR 85 west of SR 397	Principal Arterial	4 lane divided	27,500	B
SR 85 north of 189	Principal Arterial	4 lane divided	30,500	C
SR 189 west of SR 85	Minor Arterial	4 lane divided	29,400	C
SR 189 east of SR 85	Minor Arterial	4 lane divided	12,900	C
SR 397	Minor Arterial	4 lane divided	12,200	B

Source: OWTPO 2007a

Note: Average Annual Daily Traffic

### **Preferred Alternative**

There are two periods of interest related to the Preferred Alternative, the construction period and the full occupancy period.

The construction period of the Preferred Alternative is anticipated to have no adverse effects on the surrounding transportation system. Construction is assumed to use normal construction methods that would be confined to the boundaries of the site. The anticipated volume of construction vehicles would be very low in comparison to existing traffic volumes. These combined factors result in there being no anticipated adverse effects related to construction activities on the site.

The full occupancy of the Preferred Alternative is expected to have no adverse effects on traffic operations in the vicinity of the site. The traffic operations assessment of the adjacent roadways and intersections show that with the assumed transportation network in place and full build out of the site, all roadways and intersections analyzed would operate within the acceptable limits described by FDOT.

The Preferred Alternative includes the construction of the Eglin AFB Lifestyle Center that contains approximately 750,000 ft<sup>2</sup> of retail space, which includes a relocated BX and two CDCs consisting of two buildings that each supports approximately 350 children (DOD 2008). It is expected that patrons of the site would include military personnel, civilian employees, and their families. The Lifestyle Center would be open to the public with the exception of the BX, Military Clothing Sales, and Class Six that would not allow members of the general public to shop there. A significant portion of the facilities that currently exist on base would be relocated to the proposed site including the following:

- Main Base Exchange (Building 1757, 125,000 ft<sup>2</sup> existing)
- Class Six (Building 1757, 8,000 ft<sup>2</sup> existing)
- Food Court (Building 1,757, 8,000 ft<sup>2</sup> existing)
- Concessionaires (Building 1,757, 8,000 ft<sup>2</sup> existing)
- Day Spa/Dry Cleaner (Building 1,765, 1,600 ft<sup>2</sup> existing).

This results in approximately 148,000 ft<sup>2</sup> of retail use relocated from the current location to the proposed site. The net effect of this is to reduce the amount of new retail in the area due to the site to approximately 602,000 ft<sup>2</sup>.

In order to determine the potential effects of the Preferred Alternative on the surrounding transportation system, it is necessary to determine the quantity of new trips being generated by the Preferred Alternative upon completion of construction, the distribution of those trips to the surrounding transportation system, and the assignment of trips to specific access points to the site.

**Trip Generation.** Trip generation for the site was performed using the methodologies and information from the Institute of Transportation Engineers (ITE) (ITE 2003). Both daily and peak hour trips were generated. The total quantity of new trips entering and exiting the site was derived by using the base trip generation rates utilized by the ITE (ITE 2003). This information is presented as **Table 3-13**.

**Table 3-13. Total Preferred Alternative Generated Trips**

			Trip Generation Rates <sup>1</sup>		Trips Generated	
			Weekday		Weekday	
Land Use ID	Land Use Description	SF (000's)	Daily	PM Peak Hour	Daily	PM Peak Hour
820 <sup>2</sup>	Shopping Center	549	33.55	3.16	18,420	1,730
861 <sup>3</sup>	New BX	224	41.8	4.24	9,360	950
565	Day Care Center	610	4.48	0.82	2,730	500
			Total		<b>30,510</b>	<b>3,180</b>
			Total Trips Entering Site		<b>15,255</b>	<b>1,521</b>
			Total Trips Exiting Site		<b>15,255</b>	<b>1,659</b>

Source: ITE 2003

<sup>1</sup> Fitted curve equations used for land use ID 820 where available.

<sup>2</sup> This land use code is for Discount Club which was the most representative of a BX. It has membership required and discount prices.

<sup>3</sup> Average rates were used for land use ID 861 and 565 due to small sample sizes.

Not all the trips entering and exiting the proposed site would be new trips on the surrounding transportation system. Many trips would be derived from vehicles already on the surrounding roadway system. This is called a "pass-by" trip and the ITE Trip Generation Handbook (2003) recommends a "new" trip reduction factor of 20% for a shopping center (ITE 2003). This factor applies to both the shopping center use and the BX use. In addition, 290,000 ft<sup>2</sup> of the proposed retail uses exist today on base and are merely being relocated.

The proposed site is close enough to the existing BX and related uses that trips to and from the relocated retail will approximately follow the same patterns and are already present on the existing transportation system. **Table 3-14** shows the effect of these factors on the trips generated by the Proposed Action and using the surrounding transportation system.

**Trip Distribution.** The trips using the site were distributed to the surrounding area by utilizing existing 2007 traffic data (FDOT 2007). Analysis of these data led to the trip distribution pattern shown in **Table 3-15**.

**Table 3-14. New Preferred Alternative Generated Trips**

Land Use ID	Land Use Description	SF (000's)	Trip Generation Rates <sup>1</sup>		Trips Generated	
			Daily	PM Peak Hour	Weekday	Weekday
820 <sup>2</sup>	Shopping Center	549	33.55	3.16	18,420	1,730
861 <sup>4</sup>	New BX	224	41.8	4.24	9,360	950
565	Day Care Center	610	4.48	0.82	2,730	500
<b>Total</b>					<b>30,510</b>	<b>3,180</b>
<b>Pass By Trip Reduction (20%)<sup>3</sup></b>					<b>6,102</b>	<b>636</b>
<b>Relocated BX and Retail Trip Reduction<sup>5</sup></b>					<b>6,223</b>	<b>624</b>
<b>Total New Trips</b>					<b>18,185</b>	<b>1,920</b>

Notes:

<sup>1</sup> Source: ITE 2003<sup>2</sup> Fitted curve equations used for land use code 820 where available.<sup>3</sup> Source: ITE 2004<sup>4</sup> This land use code is for Discount Club which was the most representative of a BX. It has "Membership" required and discount prices. Average rates were used for LU ID 861 and 565 due to small sample sizes.<sup>5</sup> Includes 125,000 ft<sup>2</sup> of relocated BX and 28,800 ft<sup>2</sup> of other relocated retail uses**Table 3-15. Distribution of Site Trips**

Roadway	Percent of Trips	Daily	Peak
SR 189 west of SR 85	22.6%	3,085	338
SR 85 north of 189	29.2%	3,985	436
SR 397 east of SR 85	16.6%	2,266	248
SR 85 west of SR 397	31.6%	4,313	472
<b>Total</b>		<b>13,649</b>	<b>1,494</b>

**Trip Assignment.** Once trips are generated and distributed to the surrounding roadway system, they must be assigned to specific access points to the proposed site in order to determine potential effects on nearby roadways and intersections as well as to determine how the access points need to be designed and controlled. For the purposes of this analysis, the following three accesses to the proposed site were assumed:

- On Poquito Road near SR 189
- On SR 189 between Poquito Road and SR 85
- On SR 85 between SR 189 and SR 397.

Trips were assigned to these access points based on the trip distribution characteristics and logical/allowed travel patterns to the site. The resulting access utilization by site-generated traffic is shown in **Table 3-16**.

**Table 3-16. Preferred Alternative Access Utilization**

Site Access	Percent of Trips
Poquito Rd near SR 189	11.3%
SR 189 between Poquito Rd and SR 85	35.9%
SR 85 Between SR 189 and SR 397	52.8%

**Potential Effect Analysis.** To determine potential effects of the full occupancy period of the Preferred Alternative, an assessment of traffic operations was performed. The transportation network used in the traffic operations assessment is composed of existing facilities and committed improvements unrelated to the Preferred Alternative. The committed improvements include improvements to the intersection of SR 189/General Bond Parkway that would reduce traffic volumes at the intersection of SR 189/SR 85.

This improvement is part of the committed projects portion of the Okaloosa-Walton FY 2008–2012 Transportation Improvement Plan by the Okaloosa-Walton Transportation Planning Organization (OWTPO 2007b). Though not part of the Preferred Alternative, this improvement is expected to be in place near the proposed site. An additional modification to background traffic volumes was made based on the BRAC decisions regarding Eglin AFB. Information regarding projected changes in traffic volumes related to the BRAC actions was taken from the Military Housing Privatization Initiative Supplemental Draft Environmental Impact Statement Eglin AFB/Hurlburt Field (EAFB 2008e).

Roadway segments near the proposed site were evaluated using FDOT criteria (FDOT 2002). The evaluation time period assumed complete construction of the Preferred Alternative, BRAC implementation, and committed improvement implementation that resulted in an analysis year of 2014. The results of this analysis are presented in **Table 3-17**.

Intersections near the proposed site and the intersections of the proposed site accesses and the State Highway System were also investigated. An analysis of this nature looks at the performance of the intersections over a period of one hour in the peak period. The peak hour investigated was the afternoon peak hour due to the level of adjacent roadway traffic and the higher afternoon trip generation characteristics of a retail center. Intersections investigated in this way included the following:

- SR 189/SR 85
- Site Access intersection on SR 189 between Poquito Road and SR 85
- Site Access intersection on SR 85 between SR 189 and SR 397.

The peak hour analysis of SR 189/SR 85 assumed that the existing lane configuration would remain the same. Potential lane configuration for the proposed site access intersections was developed to meet traffic demand at the intersections upon completion of proposed construction. The assumed lane configurations for the analyzed intersections are show in **Table 3-18**.

**Table 3-17. Preferred Alternative Transportation System Effects Summary Roadway Level**

Facility	Classification	Type	No Action AADT <sup>1</sup>	No Action AADT LOS	Preferred Alternative AADT	Preferred Alternative AADT LOS <sup>2</sup>	Net Effect
SR 85 west of SR 397	Principal Arterial	4-lane divided	30,350	C	36,100	D/E	Worsens from C to D/E
SR 85 north of 189	Principal Arterial	4-lane divided	22,000	B	27,300	B	None
SR 189 west of SR 85	Minor Arterial	4-lane divided	11,000	B	15,110	B	None
SR 189 east of SR 85	Minor Arterial	4-lane divided	14,250	B	17,260	B	None
SR 397	Minor Arterial	4-lane divided	13,450	B	13,450	B	None

Source: OWTPO 2007a and FDOT 2002

Notes:

<sup>1</sup> AADOT-Average Annual Daily Traffic

<sup>2</sup> Source: FDOT 2002

The operation of SR 85 west of SR 397 is shown to worsen from C to D/E with the implementation of the Preferred Alternative. However, the Okaloosa-Walton Transportation Planning Organization Long Range Transportation Plan (OWTPO 2007c) shows the need to widen this segment of highway from 4 lanes to 6 lanes in the near future due to factors unrelated to the Preferred Alternative. This widening would result in SR 85 operating within acceptable limits as described by FDOT.

The intersections were analyzed according to the planning level methodology used by the Transportation Research Board (TRB 2000). The peak hour operational characteristics of these intersections after build-out are presented in **Table 3-19**.

The traffic operations assessment of the adjacent roadways and intersections show that with the assumed transportation network in place and full build-out of the site, all roadways and intersections analyzed would operate within the acceptable limits described by FDOT.

Although no mitigation of adverse effects is shown to be needed by the analysis, it is important that the access intersections be designed and implemented with at least the lane configurations shown in this section. Traffic signal operational details and turn-lane storage requirements would need to be developed before the Preferred Alternative is complete.

### Commissary Alternative

This alternative includes all the elements of the Preferred Alternative with the addition of relocating the existing Commissary to the Lifestyle Center. The Commissary is currently in Building 1755 and is 142,000 ft<sup>2</sup>. **Table 3-20** below shows the Commissary alternative trip generation.

Table 3-18. Intersection Lane Configuration

Intersection	Control	Number of Lanes								
		North Approach		South Approach		West Approach		East Approach		
		Left	Through	Right	Left	Through	Right	Left	Through	Right
SR 85 / SR 189	Signalized	1	2	1	1	2	1	2	2	1
Site Access intersection on SR 189 between Poquito Road and SR 85	Signalized	n/a	n/a	2	n/a	1	n/a	2	1	1
Site Access intersection on SR 85 between SR 189 and SR 397	Signalized	1	2	1	2	2	1	1	1	2
								shared	1	n/a

**Table 3-19. Peak Hour Intersection Operations**

Intersection	Control	No Action Alternative*	Preferred Alternative Operation*	Net Effect
SR 85 / SR 189	Signalized	At Capacity	At Capacity	None
Site Access intersection on SR 189 between Poquito Road and SR 85	Signalized	n/a	Near Capacity	None
Site Access intersection on SR 85 between SR 189 and SR 397	Signalized	n/a	At Capacity	None

Source: TRB 2000

Note: \*Utilizes Signalized Intersection Analysis Planning Methodology.

**Table 3-20. Commissary Alternative Trip Generation**

			Trip Generation Rates <sup>1</sup>		Trips Generated	
			Weekday		Weekday	
Land Use ID	Land Use Description	SF (000's)	Daily	PM Peak Hour	Daily	PM Peak Hour
820 <sup>2</sup>	Shopping Center	691	33.55	3.16	23,180	2,180
861 <sup>3</sup>	New BX	224	41.8	4.24	9,360	950
565	Day Care Center	610	4.48	0.82	2,730	500
			Total		35,270	3,630
			Total Trips Entering Site		17,635	1,737
			Total Trips Exiting Site		17,635	1,893

Notes:

<sup>1</sup> Source: ITE 2003<sup>2</sup> Fitted curve equations used for land use code 820 where available.<sup>3</sup> This land use code is for Discount Club which was the most representative of a BX. It has "Membership" required and discount prices. Average rates were used for LU ID 861 and 565 due to small sample sizes.

Because the Commissary is an existing relocated use, there are no additional new trips using the surrounding roadway system due to the relocation of the Commissary. There are, however additional trips using the proposed site access points. The same assumptions about lane configurations and control made for the Preferred Alternative are made for this alternative. The operations of the site access intersections and the intersection of SR 85/SR 189 with respect to the Commissary alternative are shown in **Table 3-21**.

The analysis shows that the site access intersection on SR 85 between SR 189 and SR 397 would operate in an over capacity condition in this alternative.

**Table 3-21. Commissary Alternative Peak Hour Intersection Operations**

Intersection	Control	No Action Operation*	Preferred Alternative Operation*	Net Effect
SR 85 / SR 189	Signalized	At Capacity	At Capacity	None
Site Access intersection on SR 189 between Poquito Road and SR 85	Signalized	n/a	At Capacity	None
Site Access intersection on SR 85 between SR 189 and SR 397	Signalized	n/a	Over Capacity	None

Source: TRB 2000

Note: \*Utilizes Signalized Intersection Analysis Planning Methodology

The site access intersection on SR 85 between SR 189 and SR 387 would need to include an eastbound “free right” turn lane so that traffic exiting the site could turn right onto SR 85 without entering the signalized intersection. This reduces demand on the intersection to allow it to operate in an at capacity condition.

### No Action Alternative

Under the No Action Alternative, the AAFES Lifestyle Center would not be constructed, and traffic conditions would remain as described in **Section 3.9.2**. There would be no effects on the transportation system.

## 3.10 Utilities and Infrastructure

### 3.10.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. Utilities and infrastructure include power supply, water supply, sewer and waste water systems, gas supply, liquid fuel supply, communications, transportation, and solid waste disposal. The infrastructure information contained in this section provides a brief overview of each infrastructure component and comments on its existing general condition.

### 3.10.2 Description of the Affected Environment

**Power Supply.** There are two companies that currently provide electric service to Okaloosa County. Choctawhatchee Electric Cooperative, Inc. (CHELCO) is a consumer-owned Touchstone Energy Electric Cooperative. It shares membership with the Alabama Electric Generation and Transmission Cooperative (EDCOC 2007a). CHELCO currently has approximately 3,385 miles of transmission line through Okaloosa and Walton counties, Florida (CHELCO undated). Gulf Power Company, a subsidiary of Southern Company, also services Okaloosa County. Gulf Power’s service territory spans the area from the Alabama border on the west to the Apalachicola River on the east and from the Alabama border on the north to the Gulf of Mexico on the south. Gulf Power owns, in part, seven plants in Mississippi, Florida, and Georgia, which produce a total generating capacity of 2,659 megawatts (MW) to serve customers in 72 towns and communities (Gulf Power 2008).

**Water Supply.** Potable water is regulated in Okaloosa County by the FDEP and the NFWFMD and supplied by Okaloosa County Water and Sewer. NFWFMD regulates drinking water in compliance with Federal drinking water standards set forth by the Safe Drinking Water Act and the National Primary Drinking Water Regulations. Okaloosa County receives most of its water supply from the Floridan Aquifer (AFMC 2006). According to NFWFMD, there are anticipated water problems in the coastal area of Santa Rosa, Okaloosa, and Walton counties where extensive development and significant withdrawals of groundwater have occurred. This area has been designated as a Water Resource Caution Area, and NFWFMD has established minimum flows and levels for both groundwater and surface water systems for the effective future management of water resources in these areas (NFWFMD 2008b).

**Sewer and Wastewater Systems.** Domestic wastewater is regulated in Okaloosa County by the FDEP and the NFWFMD. NFWFMD regulates wastewater in accordance with the CWA and the Florida Air and Water Pollution Control Act. Both act together to establish water quality standards, regulate domestic wastewater facility management and industrial waste treatment, establish domestic wastewater treatment plant monitoring requirements, and regulate storm water discharge (AFMC 2006). In April 2007, the Okaloosa County commissioners approved a \$49 million plan to replace the aging Garnier Wastewater Treatment Plant in Ocean City. The new plant, if approved for operation by the FDEP, would be located on 255 acres north of SR 189 on part of Eglin AFB. The new plant would be able to process approximately 10 million gallons per day (MGD), almost double the capacity of the Garnier plant (McDermott 2007).

**Natural Gas.** Natural gas is supplied to several areas in Okaloosa County, Florida, by the county gas district. The Okaloosa County Gas District buys approximately 34 million cubic feet per day total gas from the Gulf South and Florida Gas transmission pipelines (AFMC 2006). The Okaloosa County Gas District is part of the economic development council working with Eglin AFB in infrastructure improvements as part of Eglin AFB's Vision 2015 growth management plan (EDCOC 2007a).

**Liquid Fuel.** Liquid fuels such as diesel distillates are commonly used in trucks and tractors.

**Communications.** Okaloosa County and Eglin AFB are working together to develop a communications infrastructure as part of Eglin AFB's Growth Management Plan, Eglin AFB's Vision 2015 (EDCOC 2008). Communications infrastructure would be provided by Florida LambdaRail, a Florida LLC. LambdaRail would operate the fiber optic network infrastructure to deliver Internet and high-speed data transport services (EDCOC 2007b). The University of West Florida, in tandem with Okaloosa County, is working to share the LambdaRail services with other educational entities in the area (UWF 2006). The Okaloosa County fiber optic network is projected to be finished 2009/2010 (Okaloosa County undated b). Other communications improvements include a new telephone cable along U.S. 98, a new Cox Communications cable, and new cellular towers (EDCOC 2007a).

**Solid Waste Management.** Solid waste management is provided by two companies in the Okaloosa County area. Waste Management Systems has more than 300 active landfill sites and currently disposes of more than 128 million tons of waste per year throughout North America (WM 2008). BFI Emerald Coast Division of Allied Waste Company also services this area. Allied Waste Company operates a network of 291 collection companies, 161 transfer stations, 161 active landfills, and 53 recycling facilities in 37 states and Puerto Rico (AW 2007).

### 3.10.3 Environmental Consequences

#### Evaluation Criteria

Effects on infrastructure are evaluated based on their potential for disruption, excessive use, or improvement of existing levels of service and additional needs for energy and water consumption, sanitary sewer and wastewater systems, and transportation patterns and circulation. Effects might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads or changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to installation activities. In considering the basis for evaluating the significance of effects on infrastructure resources, several items are considered. These items include, for example, evaluating the degree to which the proposed construction projects could affect the existing solid waste management program and capacity of the area landfill. An effect might be considered adverse if a proposed action exceeded capacity of a utility.

#### Preferred Alternative

**Power Supply.** No long-term adverse effects on electricity would be expected from the construction and operation of the Lifestyle Center. There is adequate capacity and infrastructure for electrical power in the area. It is anticipated that the Lifestyle Center would obtain power from the existing service with Gulf Power. It is anticipated that the Preferred Alternative would obtain power from the existing service with ECTRC through the proposed central plant.

**Natural Gas.** No long-term adverse effects on natural gas supply are expected from the construction and operation of the Preferred Alternative. Excessive needs for natural gas are not expected.

**Liquid Fuel.** No effects on liquid fuels are expected from the construction and operation of the Preferred Alternative.

**Water Supply.** No long-term adverse effects on water supply are expected as a result of the construction and operation of the Preferred Alternative. The additional infrastructure and population projected for the area would increase the county demand for potable water. However, there are water source options that would absorb the additional needs. **Table 3-22** lists local water resource options with their estimated costs.

**Table 3-22. Water Source Options Data**

Water Source Options	Estimated Water Available for Water Supply (Mgal/d)	Estimated Costs of Water Supply (\$/1,000 gal.)*
Sand-and-Gravel	20.0	\$0.98–2.15
Floridan Aquifer-Inland	20.0	\$1.37–2.66
Conservation	< 2.5	Up to \$4.00
Reuse of Treated Water	5.0	\$2.50–3.50
Aquifer Storage and Recovery	10.0	\$2.56–2.85
Surface Water	> 20.0	\$1.92–3.42

Source: NFWMD 2000

Note: \*Does not include costs associated with local distribution systems to end users

Eglin AFB and the NFWFMD are working together to develop water conservation measures in the area by installing low-flow plumbing fixtures and converting irrigation systems to use withdrawal water from the shallow sand and gravel aquifer (EAFB 2005). Water resource needs are also being addressed through the development of alternative water supplies, creation of regional wellfields and supply systems, special permitting requirements, and long-range planning (Gulf Power 2008). The developers would be required to follow conservation measures recommended by the NFWFMD.

**Sanitary Sewer and Wastewater Systems.** No effects are expected on the sanitary sewer and wastewater systems from the construction and operation of the Preferred Alternative. Okaloosa County Water and Sewer has at least 1 MGD of excess wastewater treatment and disposal capacity (State of Florida 2007). The FDEP developed a Water Supply Facilities Work Plan to coordinate water supply with projected land use planning. Estimates from the Final Report published in March 2003 indicated that 6.1 MGD of capacity would be needed from the Garnier Waste Water Treatment Facility to service the projected population of 64,000. The new Arbennie Pritchett Water Reclamation Facility is expected to handle 10 MGD. Therefore, there would be an approximate 40 percent excess in waste water treatment capacity (State of Florida 2007). Consequently, the Preferred Alternative would not adversely affect the sanitary sewer and wastewater systems.

**Natural Gas.** No long-term adverse effects on natural gas supply are expected from the construction and operation of the Preferred Alternative. Excessive needs for natural gas are not expected.

**Liquid Fuel.** No effects on liquid fuels are expected from the construction and operation of the Preferred Alternative.

**Communications.** No adverse effects on the planned communication systems are anticipated due to adequate capacity.

**Solid Waste Management.** Minor short-term and long-term impacts would be expected on solid waste management as a result of the generation of construction debris, in addition to packaging debris and food waste that would be generated from retail stores and restaurants. Debris that is not recycled would be put in a landfill, which would be considered a minor long-term irreversible adverse effect. Construction debris is generally composed of clean materials, and most of this waste would be recycled or ground into gravel for reuse. Contractors hired for the various construction projects would be responsible for the removal and disposal of their construction wastes generated onsite. Waste Management Services and Allied Waste Company both operate in Okaloosa County and together have approximately 450 active landfills where construction wastes can be disposed of.

### **Commissary Alternative**

Effects on infrastructure for this site would be similar to the Preferred Alternative.

### **No Action Alternative**

The No Action Alternative would result in continuation of the existing condition. The affected environment would remain essentially unchanged from what was described in **Section 3.10.2**. Under the No Action Alternative, the Preferred Alternative would not be constructed; there would be no change in baseline conditions. If the No Action Alternative were carried forward, there would be no change in or effects on infrastructure and utilities at Eglin AFB.

## 3.11 Hazardous Materials and Wastes

### 3.11.1 Definition of the Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act, as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments, as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment. In general, both hazardous materials and wastes include substances that, because of their quantity; concentration; or physical, chemical, or infectious characteristics, might present substantial danger to public health or welfare or the environment when released or otherwise improperly managed.

Evaluation of hazardous materials and wastes focuses on underground storage tanks (USTs) and aboveground storage tanks (ASTs); and the storage, transport, handling, and use of pesticides and herbicides, fuels, and petroleum, oil, and lubricants (POL). Evaluation might also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health but are not regulated as contaminants under the hazardous wastes statutes. Potential hazards generally associated with demolition and renovation of older buildings include asbestos-containing material (ACM) and lead-based paint (LBP). Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, the DOD has dictated that all facilities develop and implement Hazardous Material Emergency Planning and Response Plans or Spill Prevention Control and Countermeasures Plans. Also, DOD has developed the Environmental Restoration Program, intended to facilitate thorough investigation and cleanup of contaminated sites on military installations. Through the Environmental Restoration Program, DOD evaluates and cleans up sites where hazardous wastes have been spilled or released to the environment. The Environmental Restoration Program provides a uniform, thorough methodology to evaluate past disposal sites, control the migration of contaminants, minimize potential hazards to human health and the environment, and clean up contamination. Description of the Environmental Restoration Program activities provides a useful gauge of the condition of soils, water resources, and other resources that might be affected by contaminants. It also aids in identification of properties and their usefulness for given purposes (e.g., activities dependent on groundwater usage might be restricted until remediation of a groundwater contaminant plume has been completed). These plans and programs, in addition to established legislation (i.e., CERCLA and RCRA), effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

AFPD 32-70, *Environmental Quality*, establishes the policy that USAF is committed to the following:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations

- Planning its future activities to minimize environmental effects
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible.

AFPD 32-70 and the AFI 32-7000 series incorporate the requirements of all Federal regulations, other AFIs, and DOD Directives for the management of hazardous materials, hazardous wastes, and special hazards.

### **3.11.2 Description of the Affected Environment**

**Pollution Prevention.** AFI 32-7080, *Pollution Prevention Program*, implements pollution prevention requirements at Eglin AFB. The USAF is required to procure, to the greatest extent practical, recycled or energy-efficient goods for administrative and construction activities. AFI 32-7080 prescribes the establishment of Pollution Prevention Management Plans. Eglin AFB has a Pollution Prevention Management Plan that complies with these mandates, and would require any contractor to comply with these mandates when constructing any public-private venture facilities associated with the Preferred Alternative.

Okaloosa County accepts a variety of household hazardous wastes as part of their effort to responsibly divert hazardous waste from local landfills. County disposal services include paints, pesticides, used oil, oil filters, pool chemicals, batteries, gas, solvents, paint products, tar, automotive chemicals, fluorescent bulbs, smoke alarms, fire extinguishers, and computer monitors.

**Hazardous Materials.** AFI 32-7086, Hazardous Materials Management, established procedures and standards to govern management of hazardous materials throughout the USAF. The AFI applies to all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials; and to those who manage, monitor, or track any of those activities. In addition, 10 U.S.C. § 2692, *Storage, treatment, and disposal of nondefense toxic and hazardous materials*, does not permit the storage, treatment, or disposal of any material that is a toxic or hazardous material and that is not owned either by the DOD or by a member of the armed forces (or a dependent of the member) assigned to or provided military housing on the installation unless an exception is granted from the Secretary of Defense.

The majority of hazardous materials procured are for aircraft operations that would not affect the Preferred Alternative.

**Hazardous Wastes.** Eglin AFB produces a variety of wastes from aircraft maintenance, base transportation, and civil engineering activities. Wastes include spent solvents, process chemicals, contaminated fuels, stripping chemicals, waste paint, oils and lubricants, and medical biohazard waste. AFI 32-7042, *Hazardous Waste Management Plan*, deals with key points in implementing the complex area of hazardous waste management required by RCRA as enforced by the USEPA and the FDEP. The plan covers the control and management of hazardous materials from the point they become hazardous wastes at the point of generation to the point of ultimate disposal. The scope of the plan is implementation of the USEPA's philosophy of "cradle-to-grave" management and control of hazardous waste. AFI 32-7005 regulates the identification, handling, storage, and record-keeping related to hazardous waste on installations. Hazardous waste at Eglin AFB is disposed of within 90 days. Similar to the use and control of hazardous materials, tenants would establish procedures for handling, storing, and shipping of any hazardous waste in accordance with state and local regulations.

**Asbestos-Containing Material (ACM).** Asbestos is a naturally occurring mineral formation. It has historically been used in building materials because asbestos is fire-resistant, has high tensile strength, and has low heat and electrical conductivity. Asbestos is a friable material readily inhaled, resulting in

respiratory complications including asbestosis or lung cancer including mesothelioma. However, inhalation of friable asbestos is only a concern during construction or deconstruction activities. Proper use of personal protective equipment in accordance with Occupational Safety and Health Administration (OSHA) regulations would mitigate any ill effects from friable ACM.

In accordance with USEPA guidelines for maintaining and removing ACM, USAF developed AFI 32-1052, *Facility Asbestos Management*, in March 1994. This comprehensive plan provides the direction for asbestos management at USAF installations. AFI 32-1052 incorporates by reference the applicable requirements of 29 CFR Part 669 et seq., 29 CFR 1910.1025, 20 CFR 1926.58, 40 CFR 61.3.80, Section 112 of the CAA, and other applicable AFIs and DOD Directives. AFI 31-1052 requires each installation to develop an asbestos management plan to maintain a permanent record of the status and condition of all ACM in installation facilities, record asbestos management efforts, and detail asbestos removal plans.

**Lead-Based Paint (LBP).** In October 1992, Congress passed the Residential Lead-Based Paint Hazard Reduction Act of 1992, as promulgated in 40 CFR Part 745, and 24 CFR Part 35 which requires disclosure by persons selling or leasing housing constructed before the phase out of residential LBP use in 1978 if known LBP or LBP hazards exist. This act, commonly called Title X, requires Federal agencies to comply with Federal, state, and local laws relating to LBP activities and hazards.

USAF policy requires that installations have specific procedures for managing facilities with LBP and protecting personnel from the hazards associated with deteriorated LBP. The LBP Management Plan focuses on protecting children from LBP and preventing facility occupants from exposure to LBP.

**Radon.** Radon is a naturally occurring radioactive gas that develops in soils and rocks as uranium decays. Radon has the tendency to accumulate in enclosed spaces such as basements that are generally below ground and have poor ventilation. Radon is an odorless, colorless gas that has been determined to increase the risk of developing lung cancer. The average (mean) radon level in homes in the United States is approximately 1.3 picocuries per liter (pCi/L), which is three times greater than the average outdoor level of 0.4 pCi/L. Because of this risk, the USEPA recommends that Americans consider fixing their home when radon levels are between 2 pCi/L and 4 pCi/L.

USEPA developed the USEPA Map of Radon Zones using five factors to determine radon potential: indoor radon measurements, geology, aerial radioactivity, soil permeability, and foundation type. Radon potential assessment is based on geologic provinces, and is the quantitative assessment of radon potential. According to the USEPA Radon Zone map for Okaloosa County, Florida, the base is in a zone of low radon potential. Based on this assessment, the USEPA has assessed that Okaloosa County has a predicted average indoor radon screening level less than 2 pCi/L (USEPA 2007).

**Environmental Restoration Program.** The Environmental Restoration Program, formerly known as the Installation Restoration Program, is a subcomponent of the Defense Environmental Restoration Program that became law under SARA. The Environmental Restoration Program requires each DOD installation to identify, investigate, and clean up hazardous waste disposal or release sites. One Eglin AFB Environmental Restoration Program site is near the proposed site. Site SS-90 (AOC48) is several hundred feet from the northern border of the proposed site. In November 1986, approximately 2,400 gallons of diesel fuel were spilled on SR 189 when a tanker truck owned by Nugget Oil Company overturned, creating the Environmental Restoration Program Site SS-90. Environmental Restoration Program Site SS-90 is currently in remediation by Nugget Oil Company (AAC 2003b).

Groundwater monitoring wells could be installed at the southeastern corner of the proposed site at an area designated as AOC-54. This site is a third-party Environmental Restoration Program site, meaning that it had been contaminated and is in the process of clean-up. AOC-54 recently had arsenic-contaminated

soils removed; groundwater monitoring wells are proposed for the site to determine if arsenic contamination has leached from soils into groundwater.

### **3.11.3 Environmental Consequences**

#### **Evaluation Criteria**

Effects on hazardous materials and waste management would be considered significant if the Federal action resulted in noncompliance with applicable Federal and state regulations or permit capabilities. Effects on pollution prevention would be considered significant if the Federal action resulted in worker, resident, or visitor exposure to hazardous materials, or if the action generated quantities of these hazardous materials beyond the capability of management procedures. Effects on the Environmental Restoration Program would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment. Effects on fuels management would be significant if management policies, procedures, and handling capacities could not accommodate the proposed activities.

#### **Preferred Alternative**

**Pollution Prevention.** Negligible long-term effects would be expected as a result of constructing and operating the Preferred Alternative. The Preferred Alternative would be required to develop pollution prevention management programs as set forth in state and local rules and regulations in accordance with the Emergency Planning and Community Right-To-Know Act (EPCRA) and the Pollution Prevention Act of 1990.

**Hazardous Materials.** Long-term minor adverse effects would be expected as a result of the use of hazardous materials during the construction process. It is not anticipated that large volumes of hazardous materials would be used during operation of the Preferred Alternative; most hazardous materials use would be of small quantity and considered household hazardous materials (e.g., cleaning solutions, paint). Some exceptions include the potential for photoprocessing chemicals that may be used in a retail photo shop. Dry cleaning chemicals may be used in dry cleaners if the actual cleaning is performed on site. The use of backup generators would require storage of small quantities of petroleum fuel. Storage tanks would be in compliance with AFI 32-7044, *Storage Tank Compliance*, or state or local government regulations. Management of any materials used at the proposed site would be required to be consistent with the installation *Hazardous Materials Management Plan* and the Response Plans or Spill Prevention, Control, and Countermeasure Plans. The *Hazardous Waste Management Plan* provides plans and procedures for handling, storing, and disposing of hazardous materials. The Response Plans or Spill Prevention, Control, and Countermeasure Plans list the procedures to prevent, respond to, and train for hazardous material and petroleum product spills.

**Hazardous Wastes.** Short-term minor adverse effects would be expected from the generation of hazardous wastes during the construction process. The construction permits along with any necessary permits for use of hazardous wastes would be the responsibility of the development contractor. The Hazardous Waste Operations and Emergency Response Standard (HAZWOPER) regulations that protect workers are discussed in 29 CFR 1910.120 and 29 CFR Part 1926 and would be followed.

Limited hazardous waste is expected to be generated during everyday operations of the AAFES Lifestyle Center due to its use for retail tenants. If necessary, the *Hazardous Waste Management Plan* provides plans and procedures for handling, storing, and disposing of hazardous materials. The Spill Prevention Control and Countermeasures Plan lists the procedures to prevent, respond to, and train for hazardous

material and petroleum product spills. The net change in hazardous materials and waste from the proposed site under the Preferred Alternative would likely not require a permit under RCRA.

**Asbestos-Containing Material and Lead-Based Paint.** USAF regulations prohibit the use of ACM and LBP for new construction. Therefore, no effects from ACM or LBP are expected from the construction of the Preferred Alternative.

**Radon.** Okaloosa County is within an area of low potential for radon gas (USEPA 2007). Therefore, no exposure to radon gas is anticipated from the construction of the Preferred Alternative.

**Environmental Restoration Program.** One Environmental Restoration Program site, SS-90, is located within several hundred feet of the northern boundary of the proposed site. However, it is not expected that construction of the Preferred Alternative would be affected by Environmental Restoration Program Site SS-90. AOC-54, located at the far southeast corner of the proposed site, has been remediated and would not likely interfere with proposed construction. Should contamination be encountered, handling, storage, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations and procedures. HAZWOPER regulations that protect workers and the public at or near a hazardous waste cleanup site are discussed in 29 CFR 1910.120 and 29 CFR Part 1926. The FDEP, Bureau of Waste Cleanup provides the regulations for the clean-up of hazardous waste sites, and response and investigation for liability through Title 62 of the F.A.C.

### **Commissary Alternative**

Effects from hazardous materials and wastes for this site would be similar to the Preferred Alternative.

### **No Action Alternative**

Under the No Action Alternative, Eglin AFB would not construct the Preferred Alternative, which would result in the continuation of the existing condition, as described in **Section 3.11.3**. No direct environmental effects would be expected on hazardous materials and wastes.

## 4. Cumulative and Other Effects

### 4.1 Cumulative Effects

Cumulative effects on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative effects can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative effects resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

### 4.2 Projects Considered for Potential Cumulative Effects

***Emerald Coast Technology and Research Campus (ECTRC).*** Eglin AFB plans to lease approximately 118 acres to establish the ECTRC. The ECTRC is envisioned as a partnership campus between Federal and state government, including the military at Eglin AFB, the private sector, and academia. The ECTRC would be developed as a campus attractive to hi-tech companies paying premium wages to skilled professionals. With military and private sector co-use of facilities and access to University of Florida resources, the campus would create a synergistic environment benefiting current and future missions, research, development, and the communities at Eglin AFB. The ECTRC is proposed for construction on Eglin AFB property directly to the west of the AAFES Lifestyle Center proposed site.

***BRAC Actions.*** In 2005, the Base Closure and Realignment Commission recommended specific military installation closures and asset realignment to streamline military operations. Eglin AFB was included among the military installations recommended for BRAC actions. BRAC became law in November 2005, initiating three new missions projected to begin at Eglin AFB in FY 2010 and 2011. The missions, and the details of each mission, include elements from BRAC and non-BRAC projects (EAFB 2007c and USAF 2007).

- JSF Initial Joint Training Site will be established at Eglin AFB. This will involve relocating 200 pilot and maintenance instructor positions to Eglin AFB. As a result of the BRAC Action, the USAF will relocate approximately 2,200 government personnel and 248 contractors to Eglin AFB. In addition, approximately 120 student pilots and 668 student maintainers will attend daily courses at Eglin AFB.
- 7th Special Forces Group and 1,352 active-duty positions will be realigned to Eglin AFB. As a result of the BRAC Action, the number of active-duty members in the U.S. Army could increase to 2,240.
- The Weapons and Armaments In-Service Engineering Research, Development & Acquisition, and Test and Evaluation and the Defense Threat Reduction Agency National Command Region Conventional Armament Research Organization will be realigned to Eglin AFB, including approximately 21 government employees and 15 contract employees.
- Relocation of an altitude chamber (from Moody AFB, Georgia) to Eglin AFB is possible (non-BRAC Action).

New missions at Eglin AFB will result in the following (EAFB 2007c):

- About 5,000 military, government civilians, students, and contractors will arrive at Eglin AFB. The majority of these will arrive in FYs 2010 and 2011. It is anticipated that approximately 87

percent of these personnel will be enlisted, 12 percent will be officers, and 1 percent will be government civilians. It is also anticipated that an additional 200 contractors will work at Eglin AFB.

- The estimated population increase in Okaloosa County and the surrounding areas will be approximately 12,000. Eglin AFB family members will account for approximately 7,000, and government and contractor employees will account for about 5,000 personnel.

The total potential expenditures for construction and repair requirements are estimated at \$700 million.

***Military Family Housing Demolition, Construction, Renovation, and Leasing Program at Eglin AFB.*** This project includes the demolition of up to 2257 housing units and the construction of 1684 new single-family structures and multiplex units. The USAF will convey existing housing units to a private developer (with the exception of Hurlburt Field's Commando Village). Demolition and construction will occur at the Main Base and Hurlburt Field. The closest housing area to the proposed site of the Lifestyle Center is the Poquito Bayou neighborhood on Eglin AFB property, southwest of the proposed site. Under the Military Housing Privatization Initiative, 150 units at Poquito Bayou would be demolished.

***Okaloosa Regional Airport Expansion.*** The Okaloosa Regional Airport expansion will include the development of a 22.6-acre site to provide facilities for five rental car agencies. The main components of this expansion will include 800 parking spots; two new access points for the rental car parking location (one access point located on SR 85 for deliveries, and a second connecting to the airport terminal loop road for return operations); a truck inspection area; an office and maintenance bay, car wash, and fueling area; and an electrical duct extension along the proposed access road to provide power and other services to future rental car facilities. In addition, the existing fuel storage area will be moved from airport operations onto the 22.6-acre-site. It is estimated that the additional structures will total 23,300 ft<sup>2</sup> and paved areas will total 11 acres. In addition, storm water management facilities will be expanded, by 13.2 acres, to accommodate runoff from impervious surfaces associated with the new roadway and parking development. This project is scheduled for July 2008 through December 2008 (ORA 2008).

***Veterans Administration Community-Based Outpatient Clinic.*** The recently completed Veterans Administration Community-Based Outpatient Clinic consists of 16,200 ft<sup>2</sup> of space on a 10-acre parcel on SR 397 (Eglin Boulevard) adjoining the USAF Regional Hospital (also known as the Eglin Regional Hospital). Access to the clinic is from SR 397. This project has increased the impervious area on Eglin AFB by approximately 151,200 ft<sup>2</sup> and has added a 23,650-ft<sup>2</sup> storm water retention basin. Approximately 174,850 ft<sup>2</sup> of land disturbance resulted from this project.

***Florida Department of Transportation.*** FDOT has proposed an overpass at the SR 85 at SR 123 intersection. The project would also widen SR 85 to six lanes and an access road would be constructed that would connect the Okaloosa Regional Airport entrance and exit.

***The Hurlburt Skeet and Trap Facility.*** A shotgun sports shooting facility will be constructed on Eglin AFB property approximately 1.5 miles northwest of the Preferred Alternative site. The site will be accessed from Range Road 236 via SR 189. This facility will include two combination ranges and the ability to expand to an additional three ranges (five total), if needed as well as a clubhouse, an access drive, and parking for 30+ vehicles.

## 4.3 Cumulative Effects on Resource Areas

This section will evaluate resource-specific effects related to the past, present, and reasonably foreseeable actions discussed above.

**Acoustical Environment.** Under the BRAC Action, aircraft operations will likely increase at Eglin AFB; this would result in an increase in noise levels. **Sections 3.1 and 3.2** discuss the impacts that noise and land use would have on facilities constructed at the proposed site.

Noise from munitions at the proposed Hurlburt Skeet and Trap Facility would not likely have a significant cumulative effect with operations under the Proposed Action. As stated in the EA for the Hurlburt Skeet and Trap Facility, the nearest public housing areas are not likely to be exposed to small arms noise greater than DNL of 65 dBA. This housing area is about 1 mile away from the site of the Proposed Action; long-term and short-term noise impacts 1 mile away from the site of the Proposed Action are not anticipated.

Although there are large numbers of construction projects proposed on- and off-base, they would all be temporally and spatially separate entities resulting in short-term direct minor adverse cumulative effects on noise.

**Land Use.** The surrounding projects would be constructed on property that is zoned for the proposed use and are in accordance with assigned land use. However, as discussed in the previous paragraph, increased aircraft operations from the BRAC Action could result in land use compatibility issues. **Section 3.2** discusses the land use compatibility impacts as a result of the increase in aircraft operations under the BRAC Action.

**Air Quality.** Minor adverse effects on air quality could result from the cumulative effects of the construction projects; however, these effects would be short-term and localized. Although operational emissions associated with the Lifestyle Center are not expected to result in adverse effects on air quality, air emissions associated with the foreseeable future activities could result in long-term minor adverse effects. Emissions from the increase in aircraft operations from the BRAC Action and the increase in vehicle operations from the combined projects could have long-term adverse effects on air quality.

**Geological Resources.** Cumulative effects on soil through disturbance would result in short-term direct minor adverse effects mainly due to losses of air and water prior to stabilization. The Proposed Action would require an NPDES permit. As such, the Proposed Action would be subject to the requirements of a SWPPP and BMPs to reduce soil loss. Given the size of the other foreseeable projects, it can be assumed that an NPDES permit would be required for those projects as well. Consequently, the cumulative effects from the construction projects should be minimal.

**Water Resources.** As development throughout Eglin AFB and the surrounding regions continues, both surface and groundwater quality will continue to be degraded. The Proposed Action would require increased use of potable water. However, water resource conservation and management would be included in the Site Development Plan for the Proposed Action and would likely be included in the Site Development Plans for other foreseeable future actions. In addition, a permit would be required for any project that would increase water consumption.

Under the Preferred Alternative and other foreseeable future actions, vehicle operations would increase, which would increase the potential for fuel spills and leaks. This effect can be mitigated through improved BMPs and storm water retention ponds. Consequently, the cumulative effect of these activities would only have minor direct and indirect adverse effects on surface and groundwater.

**Biological Resources.** The Preferred Alternative, when considered in conjunction with the other foreseeable projects, could have an effect on protected species such as the gopher tortoise, pineland hoary pea and the eastern indigo snake. However, surveys would be completed prior to construction activities. If any listed species are sighted during construction activities, all activities would cease until the species had been moved from the area. Therefore, it is not anticipated that the projects would have a significant effect on the protected species.

There would be no effects expected on wetlands with the Preferred Alternative and there is no evidence of the direct effects in other foreseeable actions. Implementation of BMPs during and after construction would minimize indirect effects on wetlands during the various projects on Eglin AFB.

The ECTRC project is to be constructed on a site adjacent to the proposed Lifestyle Center site. Wildlife would relocate into adjacent areas as a result of construction activities. Cumulative adverse effects could occur because the construction projects side by side would limit the areas the wildlife could relocate into. Similarly, minor cumulative effects on biological resources may result from cumulative noise resulting from the adjacent construction activities and the proposed Hurlburt Skeet and Trap Facility.

**Cultural Resources.** If the sites are avoided and preserved with fencing that cannot be breached, no cumulative impact is expected. However, long-term, major cumulative impact could occur from construction, from removal of artifacts which would affect the cultural and historical setting of Eglin AFB, and from data recovery which is considered an adverse effect in and of itself under the revised Section 106 regulations (36CFR800.5(a)(2)(i)). Either avoidance or data recovery requires consultation to determine appropriate measures to resolve adverse effects with the Florida DHR and 96 CEG/CEVH prior to proceeding with the undertaking to properly comply with Section 106 of the NHPA.

**Socioeconomic Resources.** It is estimated that the new missions and staffing changes at Eglin AFB will result in an additional 7,749 jobs during 2015 and an increase in the gross regional product of \$558.9 million during the same time period (EDCOC 2007c). This effect, when considered in conjunction with the other foreseeable projects, will result in a beneficial effect on Okaloosa County and the surrounding regions.

**Utilities, Traffic, and Infrastructure.** Cumulative effects on utilities, traffic, and infrastructure have the potential to cause long-term effects on water supply, sanitary sewers, traffic, and electrical and gas services. However, each project will have an individual plan for the required infrastructure and will obtain the required permits.

As previously stated, the estimated population increase in Okaloosa County and the surrounding areas, from the new missions at Eglin AFB, will be approximately 12,000 personnel. The proposed Lifestyle Center project would increase traffic on SR 85, SR 189, and SR 397. The ECTRC project will increase traffic on SR 189 and Poquito Road. The Veterans Administration clinic has also resulted in a slight increase in traffic on SR 397 between the Eglin AFB west gate entrance and the intersection of SR 397 with SR 85. The Okaloosa Regional Airport expansion will provide facilities for five rental car agencies. The cumulative effect from these projects will increase traffic on the local roads. However, measures to minimize adverse traffic effects have been discussed or recommended in each of the EAs for the individual projects. Traffic impact analysis for the proposed Lifestyle Center takes past and future projects into account, and concludes that there would be no adverse effects on the traffic infrastructure. The study for the Veterans Administration clinic concluded that the project would not substantially decrease level of service or adversely affect safety on local roads. However, mitigation measures were recommended to minimize incremental effects. The transportation projects proposed by the FDOT should mitigate the traffic increase expected from the Okaloosa Regional Airport expansion.

The ECTRC project would provide adequate roadway systems and parking facilities within the ECTRC complex. No significant effects would be expected on the transportation network at ECTRC, which would be developed and maintained by proactive repair and replacement projects.

Under the Military Family Housing project, the older housing units at Eglin AFB would be replaced with upgraded houses. Consequently, these housing units should accommodate some of the new military personnel at Eglin AFB. This should limit some of the traffic on the local roads outside of Eglin AFB during high-volume hours. At this time, it is unknown where the majority of the new personnel will live in Okaloosa County. Consequently, although the recommended mitigation measures in the individual projects would alleviate some of the congestion during high-volume hours, it is likely the cumulative effects of the projects will cause long-term effects on local roadways.

Personnel relocating to Eglin AFB as a result of the BRAC action will likely occur over time. It has been estimated that installation housing at Eglin AFB will accommodate about 20 percent of the military personnel moving to the area as a result of the BRAC realignments. The remaining 80 percent will likely live in the civilian communities. At this time, it is unknown where the majority of the new personnel will live in Okaloosa County (EDCOC 2008).

**Hazardous Materials and Wastes.** Only minor amounts, if any, of hazardous substances would be utilized in construction of the proposed Lifestyle Center. Likewise, only minor amounts, if any, of hazardous waste would be generated during construction and operation, potentially to include dry cleaning chemicals if cleaning is performed on site. Therefore, any hazardous substance use or hazardous waste generated at the proposed Lifestyle Center would represent a negligible increase to the overall cumulative scenario.

## 4.4 Unavoidable Adverse Effects

Unavoidable adverse effects would result from implementation of the Proposed Action. None of these effects would be significant.

**Geological Resources.** Under the Proposed Action, construction activities, such as grading, excavating, and trenching of the ground, would result in some minor soil disturbance. Implementation of BMPs during construction would limit environmental consequences resulting from construction activities. Standard erosion-control means would also reduce environmental consequences related to these characteristics. Although unavoidable, effects on soils at the installation are not considered significant.

**Solid Waste.** There are expected to be unavoidable but minor adverse effect that can be mitigated to a certain extent by possible recycling opportunities.

**Hazardous Materials and Waste.** Long- and short-term minor adverse effects would be expected from the use of hazardous materials and wastes from the construction process and the operation of the proposed Lifestyle Center. However, the required permits would be obtained before construction of the Lifestyle center would begin.

## 4.5 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

The Proposed Action would occur entirely within the boundaries of Eglin AFB. The construction activities would not result in any significant or incompatible land use changes on or off the installation.

The Proposed Action would not conflict with any applicable off-installation land use ordinances or designated clear zones.

## **4.6 Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity**

Short-term uses of the biophysical components of the human environment include direct construction-related disturbances and direct effects associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those effects occurring over a period of more than 5 years, including permanent resource loss.

Several kinds of activities could result in short-term resource uses that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in significant intensification of land use at Eglin AFB or in the surrounding area.

## **4.7 Irreversible or Irrecoverable Commitment of Resources**

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible and irretrievable commitments of resources that would result from implementation of the Proposed Action involve the consumption of material resources used for construction, energy resources, land, and human labor resources. The use of these resources is considered to be permanent.

**Material Resources.** Material resources utilized for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads and parking areas), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

**Energy Resources.** Energy resources used for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), natural gas, and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used by the additional traffic. Natural gas and electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant effects would be expected.

**Biological Habitat.** The Proposed Action would result in loss of vegetation and wildlife habitat. However, the loss would be minimal and not considered significant on a regional basis.

**Human Resources.** The use of human resources for construction and operation is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities and is considered beneficial.

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## **APPENDIX A**

### **APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA**



## Appendix A

# Applicable Laws, Regulations, Policies, and Planning Criteria

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When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.

### **Airspace**

Airspace management in the USAF is guided by Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. This AFI provides guidance and procedures for developing and processing special use airspace (SUA). It covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations. It applies to activities that have operational or administrative responsibility for using airspace and establishes practices to decrease disturbances from flight operations that might cause adverse public reaction and provides flying unit commanders with general guidance for dealing with local problems.

### **Noise**

The Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near U.S. Air Force (USAF) installations.

### **Land Use**

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development and based on findings of the Federal Interagency Committee on Noise (FICON) are used to recommend acceptable levels of noise exposure for land use.

### **Air Quality**

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are

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designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what effect an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS, contribute to an increase in the frequency or severity of violations of NAAQS, or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds presented in 40 CFR 93.153. An action is regionally significant when the total nonattainment pollutant emissions exceed 10 percent of the AQCR's total emissions inventory for that nonattainment pollutant. If a Federal action does not meet or exceed the *de minimis* thresholds and is not considered regionally significant, then a full Conformity Determination is not required.

## **Safety**

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFPD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

## **Geological Resources**

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland are soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, deep or thick effective rooting zones, and are not subject to periodic flooding. Under the Farmland Protection Policy Act, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject

to the Farmland Protection Policy Act include Federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

## **Water Resources**

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into U.S. waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the U.S. Army Corps of Engineers (USACE). Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impact on water quality from actions such as the discharge of dredge or fill material into U.S. waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water-quality standards and to develop Total Maximum Daily Loads (TMDLs). A TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

The Wild and Scenic Rivers Act of 1968 provides for a wild and scenic river system by recognizing the remarkable values of specific rivers of the Nation. These selected rivers and their immediate environment are preserved in a free-flowing condition, without dams or other construction. The policy not only protects the water quality of the selected rivers but also provides for the enjoyment of present and future generations. Any river in a free-flowing condition is eligible for inclusion, and can be authorized as such by an Act of Congress, an act of state legislature, or by the Secretary of the Interior upon the recommendation of the governor of the state(s) through which the river flows.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted floodproofing and flood protection to include elevating structures above the base flood level rather than filling in land.

## **Biological Resources**

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintains the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse effects and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a Memorandum of Understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

## **Cultural Resources**

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (AHP), State Historic Preservation Officers (SHPOs), and the National Register of Historic Places (NRHP). AHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account effects of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the AHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential effects, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 establishes rights of American Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on

Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners' access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

## **Socioeconomics and Environmental Justice**

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental effects that its activities have on minority and low-income populations, and develop agencywide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

**Protection of Children from Environmental Health and Safety Risk.** EO 13045 establishes the President's Task Force on Environmental Health Risks and Safety Risks to Children. The Task Force reports to the President in consultation with the Domestic Policy Council, the National Science and Technology Council, the Council on Environmental Quality, and the Office of Management and Budget (OMB). The Task Force recommends to the President Federal strategies for approaching children's environmental health and safety issues within the limits of the Administration's budget, coordinates research agendas, identifies threats to children's health, proposes increases in public outreach, and states the desirability of new legislation. This task force identified four priority areas for immediate attention: asthma, unintentional injuries, developmental disorders (including lead poisoning), and cancer.

## **Hazardous Materials and Waste**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act (PPA) of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]) sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decision making processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for "cradle-to-grave" management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the EPCRA, which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property

owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as “owners.” However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the “innocent purchaser” defense under CERCLA. According to Title 42 United States Code (U.S.C.) 9601(35), the current owner/operator must show it undertook “all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice” before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II provides statutory framework for “Asbestos Hazard Emergency Response,” which applies only to schools. TSCA Title III, “Indoor Radon Abatement,” states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, “Lead Exposure Reduction,” directs Federal agencies to “conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of lead-based paint and other lead exposure hazards.” Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning lead-based paint.

**APPENDIX B**

**INTERAGENCY REVIEW AND PUBLIC INVOLVEMENT**



## PUBLIC NOTICE

### Notice of Availability

#### **Draft Finding of No Significant Impact for the Environmental Assessment Addressing an Army and Air Force Exchange Service (AAFES) Lifestyle Center at Eglin AFB, Florida**

**Eglin AFB, Florida** – An Environmental Assessment addressing construction of the proposed AAFES Lifestyle Center at Eglin Air Force Base (AFB) is being prepared. The U.S. Air Force and AAFES are proposing to construct a Lifestyle Center, a modern shopping, dining, and entertainment destination serving the Eglin AFB community. The Lifestyle Center would be composed of key facilities, one at each end of the development. Preliminary plans position the main Base Exchange (BX) at one end of the Lifestyle Center, and another major establishment, such as a first-run movie theater, at the other end. Between these two anchors would be a Main Street-style center featuring name-brand retailers and tenants that are found in many modern retail destination centers throughout the country such as apparel stores, book stores, sit-down restaurants and food courts, and various service tenants.

The U.S. Air Force is proposing to issue a Finding of No Significant Impact (FONSI) based on the EA. The detailed analysis considered the potential effects of the Proposed Action and alternatives, including the No Action Alternative, at a proposed site approximately one half mile northwest of the Eglin AFB west gate along Lewis-Turner Boulevard. The Draft EA presents analysis of potential effects on 11 resource areas: noise, land use, air quality, geological resources, water resources, biological resources, cultural resources, socioeconomic resources and environmental justice, traffic, utilities, and hazardous materials and wastes. The results of analyses in the Draft EA indicate that neither the Proposed Action nor alternatives would have a significant impact on the environment.

Copies of the Draft FONSI and Draft EA describing the Proposed Action and alternatives in detail and presenting the analysis are available for review at the Fort Walton Beach Library, the Shalimar Library and the Valparaiso Library. Public comments on the Draft FONSI and Draft EA will be accepted through October 5, 2008.

Written comments and inquiries on the Draft FONSI and Draft EA should be directed to Mr. Mike Spaits at 96 CEG/CEV, 501 DeLeon Street, Suite 101, Eglin AFB, Florida 32542, or email [spaitsm@eglin.af.mil](mailto:spaitsm@eglin.af.mil).

**Table B-1 Federally Recognized Tribes that Eglin AFB Consults With**

Name of Tribe	Federally Recognized	Contact Person	Tribal Leader	Address	Phone Number
Miccosukee Tribe of Indians of Florida	Yes	Mr. Fred Dayhoff, Tribal Consultant or Mr. Steven Terry, Land Resource Manger	Billy Cypress	Mile Marker 70, U.S. 41 at Administration Building Miami, FL 33144	305-223-8380 ext. 2243
Seminole Tribe of Florida	Yes	Billy Cypress	Billy Cypress (THPO)	3170 N 64 <sup>th</sup> Avenue Hollywood, FL 33024	954-965-2424
Poarch Band of Creek Indians of Alabama	Yes	Robert Thrower	Chairman Eddie Tullis	5811 Jack Springs Road Atmore, Alabama 36502	251-368-9176 ext. 2655



September 4, 2008

Fort Walton Beach Library  
185 Miracle Strip Pkwy SE  
Fort Walton Bch, FL 32548

Dear Sir or Madam:

The public notice shown below has been published in the *Northwest Florida Daily News* on September 5, 2008. Please place the enclosed copy of the Draft Environmental Assessment either on reserve or in the reference section of your library. Members of the public have been invited to review the document at your library until October 5, 2008. The document should not leave the library.

#### PUBLIC NOTICE

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If you have any questions, please contact me at (830) 438-4720, ext. 108. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Stephen G. Pyle'.

Stephen G. Pyle  
Project Manager  
engineering-environmental Management, Inc.



September 4, 2008

Shalimar Library  
6 10th Ave.  
Shalimar, FL 32579

Dear Sir or Madam:

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Sincerely,

A handwritten signature in blue ink that appears to read "Stephen G. Pyle".

Stephen G. Pyle  
Project Manager  
engineering-environmental Management, Inc.



September 4, 2008

Valparaiso Library  
459 Valparaiso Parkway  
Valparaiso, FL 32580

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If you have any questions, please contact me at (830) 438-4720, ext. 108. Thank you.

Sincerely,

Stephen G. Pyle  
Project Manager  
engineering-environmental Management, Inc.



September 4, 2008

Florida Clearinghouse  
3900 Commonwealth Blvd.  
Mail Station 47  
Tallahassee, FL 32399-3000

Dear Lauren Milligan:

engineering-environmental Management (e<sup>2</sup>M), on behalf of Eglin Air Force Base (AFB), requests input into the preparation of an Environmental Assessment (EA) addressing an Army and Air Force Exchange Service (AAFES) Lifestyle Center at Eglin AFB, Florida.

The U.S. Air Force (USAF) and AAFES are proposing to construct a Lifestyle Center at Eglin AFB. The Lifestyle Center is a proposed modern shopping, dining, and entertainment destination that would serve the Eglin AFB community. The Lifestyle Center would be composed of key facilities, one at each end of the development. Preliminary plans position the main Base Exchange (BX) at one end of the Lifestyle Center, and another major establishment, such as a first-run movie theater, at the other end. Between these two anchors would be a Main Street-style center featuring name-brand retailers and tenants that are found in many modern retail destination centers throughout the country such as apparel stores, book stores, sit-down restaurants and food courts, and various service tenants. Two hard copies and 14 CDs of the Draft EA, which includes a detailed description of the proposal, are included with this correspondence for distribution to the appropriate Florida agencies for review. A consistency determination in accordance with the federal Coastal Zone Management Act (CZMA) is included in Appendix F of the Draft EA.

The environmental impact analysis process for the Proposed Action and alternatives is being conducted by Eglin AFB in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Draft EA and solicit your comments concerning the proposal and any potential environmental issues of concern to you.

Please provide any general or public or agency comments, and any CZMA letters of concurrence directly to Mr. Mike Spaits at 96 CEG/CEV, 501 DeLeon Street, Suite 101, Eglin AFB, FL 32542-5133.

If members of your staff have any technical-related questions or inquiries please feel free to contact me at the address listed at the top of this letter.

If you have any questions, please contact me at (830) 980-4702, ext. 108. Thank you.

Sincerely,

Stephen G. Pyle  
Project Manager  
engineering-environmental Management, Inc.

**Table B-2. Public Comments on the Draft Environmental Assessment**

Comment	Commenter	Response to Comment
<p>please consider a applebe's for the new plaza!!!</p> <p>thank you</p>	rcarrollrich	Comment noted.
<p>Mr. Spaits, Great to see plans are becoming action on the AAFES shopping center. I was somewhat surprised to see a Post (vice Base) exchange. Without a Post how can there be a Post exchange?</p>	Dean Williams, CMSGT Ret.	The graphic in question was created by AAFES as an example of Lifestyle Center possible layout on military installations. The graphic was initially developed for an Army proposal and is not an actual design layout for the proposal at Eglin Air Force Base.
<p>Dear Mr. Spaits:</p> <p>It is unfortunate that Crestview always seems to be left out of the scheme of Eglin's plans. I say unfortunate because there is such a huge military population here....and it is growing. It will grow almost exponentially with the arrival of the Special Forces from Fort Bragg, NC, and the F-35 input from Pensacola.</p> <p>Yet, your environmental assessment isn't even "offered" to Crestview for review and comment. I'm sure the Bob Sikes Library would be happy to receive a copy for public comment.</p> <p>My second comment considers the location of this "off base" complex. Consider a location in the vicinity of Field #3 "Duke Fld."....Hwy 85 is a public highway, even though it traverses the corridor through the Eglin reservation. Or, select any location between Field #3 and the north-side of Niceville.</p> <p>Mr. Spaits, may I remind you that Crestview is the largest community within Okaloosa County, and it is the County "seat." Some would say that there is a large "unincorporated" area between the downtown of FWB and the fairgrounds, which would make it larger than Crestview. Those people have not visited Crestview recently to see all the growth outside of Crestview.</p> <p>My third comment would consider the six deep wells and pipeline that feeds water</p>	Bruce R. Hoon, USAF (Ret)	<p>Crestview locations were not considered due to the need for facilities to be located at or near the main base area of Eglin Air Force Base, as determined by base planners and AAFES. AAFES does not feel that closing the main base BX and moving it to Crestview would be a viable option.</p> <p>Water supply would be from municipal supplies. Eglin Air Force Base works with the Northwest Florida Water Management District in the development of water conservation measures in the area. Water thrifty (xeric and/or native) landscape design would be required throughout the Lifestyle Center development. In addition, AAFES and Eglin Air Force Base would require implementing Leadership in Energy and Environmental Design concepts throughout the facility. It is not anticipated that the water requirements would be higher at a new BX facility than the current facility. In addition, many of the tenants would consume very little water, such as retail clothing stores.</p>

<b>Comment</b>	<b>Commenter</b>	<b>Response to Comment</b>
<p>to the south end of Okaloosa County. This large Base Exchange complex will generate a large consumer base for more of that water. The "Floridian Aquifer", like the supply of fossil fuels is not unending. The drawdown will someday affect the consumer supply of water in Crestview.</p> <p>Mr. Spaits, being a retiree I am not against this project....but only reminding those who are responsible for its completion to consider all the above.</p> <p>Respectfully yours, Bruce R. Hoon, USAF (Ret)</p>		
<p>The proposed military 'Lifestyle Center' is the dumbest idea I have seen float to the top in 40 years. Extending the requirements for a secure military shopping area in today's environment simply does not pass the farmer's test. Eglin has the largest commissary and BX in the AFFES system, and it is certainly adequate. Spending the level of dollars stated, and locating the proposed whale outside the base perimeter is simply in[s]ane. The project will create more ill will in the local community than good it creates from the deranged planner who proposed it in the first place. If we retired military want to shop outrageously expensive stores as in Destin Com[m]ons, we go there. But I don't.</p>	John T. Mizelle Colonel, USAFR, (ret)	<p>The current facility is more than 30 years old and undersized to handle the growth Eglin is projected to experience over the next five years. The AAFES Strategic Planning Directorate is exploring new and better ways to serve our customers. Eglin fits all the criteria AAFES used to select pilot locations for the proposed Lifestyle Center, which included current size, expected growth, land availability and the need to update our existing facilities. The Lifestyle Center concept gives us the opportunity to expand our current operation and continue to serve our customers.</p>
<p>The plan is doomed. Read the papers. Heed the comments. No name store in it's right mind will locate there. The BX system does not need to ...' remain competitive..'. It IS competitive, and the shopping stop of first choice among authorized users. Because of that fact, your 'brand stores' simply will not build there.</p>		<p>AAFES has already conducted due diligence on the proposed project and surveyed the local market to ensure the concept is viable. AAFES is continuously working to better define the scope of the project. One clear finding is that the retiree market continues to grow and makes this project more viable over time. BRAC will bring even more business. We're still learning more and AAFES is adjusting as they move forward.</p>
<p>A dumb idea. Kill it early.</p> <p>John T. Mizelle Colonel, USAFR, (ret)</p>		
<p>I'm sure we can't live without this new project, but can you tell me what are you planning to do with all the beautiful animals that roam those woods? I am</p>	Judith Heiney	<p>Natural habitat on the proposed site is considered an asset to the proposed project and would be avoided to the maximum extent practicable and incorporated into site designs.</p>

<b>Comment</b>	<b>Commenter</b>	<b>Response to Comment</b>
<p>lucky enough to live in Poquito and am fortunate enough to see a doe with her fawns, a bear, a fox, even the pesky coyotes. Where do they fit into this project. Do you plans to relocate them or just let them starve in their reduced space. Why is it that we have to build, build, build, tear down the trees, and take away the home of these wonderful works of nature. Is there no way we can live without destroying all things around us. What will happen when there no more trees to cut. Sincerely Judith Heiney</p>		<p>Although some habitat loss and incidental loss if individual wildlife occurrences is expected due to construction activities, the overall impact would not be major because most species are mobile and able to relocate to adjacent suitable habitat. The area would be surveyed for the presence of sensitive species, and attempt to relocate the species would be made prior to construction.</p>
<p>Mike Spaits,  I have read about the new development on Lewis Turner Blvd in Fort Walton Beach / Shalimar.  I am the director of a large Insurance company here in Shalimar/FWB and we have a division that is designed to cater directly to the Military needs- We are interested in possible office space or retail space in the new development - will you have any space available?  Sincerely,</p>	<p>Eric Rigggenbach</p>	<p>Comment noted. Information was forwarded to AAFES representatives.</p>
<p>ERIC RIGGENBACH  Dear Mr. Spaits,  I am inquiring about the new proposed shopping center to be located just outside the main gate of Eglin AFB. I am a 19 year multiunit Subway Sandwich Franchisee, with stores located here in Okaloosa County. I live in Poquito Bayou, Shalimar and would be very interested in future development with your project. Any information or guidance you could provide to pursue this venture would be greatly appreciated.  With regards,</p>	<p>Rick Hunter</p>	<p>Comment noted. Information was forwarded to AAFES representatives.</p>
<p>Rick Hunter  Mike Spaits Eglin AFB, FL  From: Edwin Watts  Dear Mike,</p>	<p>Edwin Watts</p>	<p>The proposed Emerald Coast Technology and Research Campus (ECTRC) and AAFES Lifestyle Center are not related to one another, although they are proposed in the same general area, but on different parcels of Eglin Air Force Base property. The AAFES proposal is an AAFES project that would be</p>

<b>Comment</b>	<b>Commenter</b>	<b>Response to Comment</b>
<p>I am writing you concerning the AAFES Lifestyle Center which is proposed on the military property which covers an area approximately three quarters of a mile square at the intersection of Highway 85 and Lewis Turner Blvd.</p> <p>We understand that there will be also an Industrial Park which will cover another large adjacent area. Myself and many of my neighbors live in the Poquito area and we are concerned with this area being turned into another Santa Rosa Mall area with an Industrial Park behind it.</p> <p>Would you kindly answer the following questions for us? Is this being done by a private developer and is this property being given to them by the government. What is the connection with the Lifestyle Center and the Industrial Park? Please give us the name, addresses, phone numbers, and email addresses of all management people involved in these projects.</p> <p>Please give us the dates and times of any hearings for this project and what notifications are being given to the citizens of our area.</p> <p>Please give us any drawings with exact details of exactly what hotels and restaurants and what areas are going to be used for the Industrial Park.</p> <p>We love the military and have no problem with any thing for our wonderful military, but what concerns us is the possibility of this being used as a front for a much larger private developer turning tax payers owned land into a large commercial development which will destroy the quality of life for the residents of the Poquito area.</p> <p>Please email me at [personal contact information removed].</p> <p>I appreciate any information you could give me and thank you and our military for what you do for our country.</p> <p>Sincerely, Edwin Watts</p>		<p>constructed with funds earned through AAFES operations. It is not a "private developer" proposal. The ECTRC project is a proposal to add on to the existing Research Engineering and Education Facility (REEF) campus and would be developed by private developers through a long term lease from Eglin Air Force Base, with lease proceeds directly benefiting Eglin Air Force Base. The management mechanism, Enhanced Use Lease, is being used at military installations across the nation. Enhanced Use Lease projects generate benefits for the local military installation without the input of taxpayer dollars. Please contact Mr. Ron Daugherty, AAFES General Manager for Eglin AFB, (850) 729-8526. No developer has been selected for the ECTRC proposed action and, therefore, no contact point is available at this time.</p> <p>Notification of the two proposed projects has been given through the environmental impact assessment process for the respective projects, including public notice in the Northwest Florida Daily News of the availability of the draft Environmental Assessments, and a request for comments. No hearings are currently planned for either of the proposed projects. No plans are currently available for either proposed project, although designs are under development. These will become available in the future as project planning progresses.</p>

<b>Comment</b>	<b>Commenter</b>	<b>Response to Comment</b>
<p>Mike,</p> <p>I've heard of some stupid ideas in my time, but I believe that the concept of building a BX in the Shalimar area is a total waste of money. If the BX wants to build a new BX, they should look in North County area. The only thing up here is a small shop at Duke Field, which is only open part time. If you look at the future plans for the 33rd area and Duke field it would only make sense to expand services in the Crestview area.</p>	<p>Retired CMSgt Ken Sparks</p>	<p>Crestview locations were not considered due to the need for facilities to be located at or near the main base area of Eglin Air Force Base, as determined by base planners and AAFES. AAFES does not feel that closing the main base BX and moving it to Crestview would be a viable option.</p>
<p>Thank you (Eglin officials) for the public input invitation regarding the new BX/Commissary/Life Style Center complex off base near Sunset Lane and Lewis Turner Boulevard.</p> <p>When I read the article in May 08, both in the Eglin Dispatch and NWF Daily News my first impulse was the old Air Force adage: 'What are we fixing that isn't broke'?</p> <p>Also, comments attributed to General Eidsaune regarding the subject at the time seemed to make little sense.</p> <p>Easier base access for retired military personnel? I and all the retired personnel who I contacted NEVER, never had a problem to access the base.</p> <p>The new AAFES will be a 'model' facility? The present AAFES was (if I remember right) a model facility when it was built (Burger King about a year ago) and was upgraded several times since to maintain that status – and the same can be said, I believe, for the commissary. In fact, I would consider it an insult to the integrity of architects and engineers of that time who designed and built the BX and commissary to refer to the 70ths so negatively, even if they may have been built on a landfill.</p> <p>As far as the base's international status is concerned, Eglin has hosted foreign national contingents for many years and there seemed to be no mentionable problems in the past.</p> <p>When I asked why the present commissary and BX (with food court,</p>	<p>Johann Behnken</p>	<p>The current facility is more than 30 years old and undersized to handle the growth Eglin is projected to experience over the next five years. The AAFES Strategic Planning Directorate is exploring new and better ways to serve our customers. Eglin AFB fits all the criteria AAFES used to select pilot locations for the proposed Lifestyle Center, which included current size, expected growth, land availability and the need to update our existing facilities. The Lifestyle Center concept gives us the opportunity to expand our current operation and continue to serve our customers.</p>

Comment	Commenter	Response to Comment
<p>barber shop, theater, dry cleaning/laundry, garden shop, pharmacy, physical therapy facilities - did I get them all?) are really to be moved off base I received a sheepish smile and the remark that this is a NEW Air Force and that I was perhaps retired too long.</p> <p>The NWF Daily News article on 9 Sep 08 seemed to shed more light on the subject and my first reactions were:</p> <p>AFEES and the Commissary have too much money and they don't know what to do with the profits.</p> <p>There is too much BRAC money floating around that needs to be obligated before the dead line will affect those funds (just like the end-of-fiscal-year spending frenzy that affected AF budgets for so many years).</p> <p>Even more important, the proposed action may well be another well hidden attempt to privatize the military's most sacred cow, the BX and Commissary systems (as eluded to by Dr. Goetsch as no longer being a valid concept).</p> <p>Why would the Military insist to add insult to injury by placing military shopping facilities in plain view of the public and compete with private commerce that is only a few miles away?</p> <p>An 80 (and probably double after all the cost over-runs become visible) Million Dollar price tag for a new facility to 'follow the trend of commercial developments like Destin Commons?' Is that really necessary?</p> <p>I believe that AFEES and Commissary entities are obligated to offer military customers products of the best quality, with the best assortment in sufficient quantities at the most reasonable price; that is what keeps these facilities most competitive and saves the military customer money. A look at Sam's may be a good example: A warehouse facility with affordable prices and excellent price/quantity/ assortment.</p> <p>The statement that "They (military customers) deserve a nice, new</p>		

Comment	Commenter	Response to Comment
<p>contemporary facility" is nonsense that equates to squandering funds that are dearly needed for more important things, like weapons systems. Oh, I forgot, money pots don't mix; well in that case give greater Morale, Welfare &amp; Recreation support to our troops in harms way.</p> <p>Perhaps building a new improved complex near Field 3 would not only benefit the new Army contingent and their dependents, but also all military personnel and their dependents in the Crestview area. That action would save unnecessary travel to either the existing or the proposed new complex.</p> <p>By INVITING private enterprises to perhaps even fund (even if they claim to have super million dollar balance sheets) some of the new facilities to be also open to the public (now advertised being part of the new complex package) is in my opinion just another reason to offend and insult the non-military public; it also makes the government hostage to private lobbying interests.</p> <p>Infrastructures, such as traffic, security, etc, are issues that the experts will solve.</p> <p>In summary, this proposition appears to a ploy full of ulterior motives and superficial reasons.</p> <p>Johann Behnken Shalimar, FL</p>		

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## **APPENDIX C**

### **PHOTO DOCUMENTATION OF THE PROPOSED SITE**





**Figure C-1. Storm Water Culvert Emptying onto Northwest Corner of Proposed Site**



**Figure C-2. Storm Water Culvert – Looking North from Northwest Corner of Proposed Site**



**Figure C-3. Storm Water Drain in Median of SR 189 – Drains to North Side of Proposed Site**



**Figure C-4. Culvert on North Side of SR 189, North of Proposed Site**



**Figure C-5. Northern Edge of Proposed Site along SR 189 Looking East toward West Gate**



**Figure C-6. Northern Edge of Proposed Site Looking West Toward Poquito Road**



**Figure C-7. Representative Vegetation, Western Edge of Proposed Site**



**Figure C-8. Representative Vegetation and Terrain, Western Interior of Proposed Site**



**Figure C-9. Open Area with Borrow Pit in Southwest Portion of Proposed Site**



**Figure C-10. Random Debris Scattered Throughout Interior of Proposed Site**



**Figure C-11. Random Debris Scattered Throughout Interior of Proposed Site**



**Figure C-12. Random Debris Scattered Throughout Interior of Proposed Site**



**Figure C-13. Random Debris Scattered Throughout Interior of Proposed Site**



**Figure C-14. Random Debris Scattered Throughout Interior of Proposed Site**



**Figure C-15. Representative Vegetation at Western Edge of Proposed Site**



**Figure C-16. Western Edge of Proposed Site along Poquito Road looking North to SR 189**

## **APPENDIX D**

### **CALCULATIONS TO SUPPORT THE NOISE IMPACT ANALYSES**



**Construction Noise Calculations for the Draft EA for an AAFES Lifestyle Center at Eglin AFB, FL****Cumulative dB equation**

Cumulative dB=10\*LOG[10EXP(0.1\*dB1)+ 10EXP(0.1\*dB2)+10EXP(0.1\*dB3)]

<b>Grading</b>		
	No. Reqd. <sup>a</sup>	dBA
Equipment	per 10 acres	50 ft
Bulldozer	1	87.00
Motor Grader	1	85.00
Water Truck	1	88.00
Total per 10 acres of activity	3	

$$\begin{aligned}
 \text{Cumulative dB} &= 10 * \text{LOG}[10\text{EXP}(0.1*87) + 10\text{EXP}(0.1*85) + 10\text{EXP}(0.1*88)] \\
 \text{LOG}1448372344 &= 1448372344 \\
 10*9.16 &= 9.16 \\
 &= 91.61
 \end{aligned}$$

**Cumulative dB=91.61**

<b>Paving</b>		
	No. Reqd. <sup>a</sup>	dBA
Equipment	per 10 acres	50 ft
Paver	1	89.00
Roller	1	74.00
Total per 10 acres of activity	2	

$$\begin{aligned}
 \text{Cumulative dB} &= 10 * \text{LOG}[10\text{EXP}(0.1*89) + 10\text{EXP}(0.1*74)] \\
 \text{LOG}819447099 &= 819447099 \\
 10*8.91 &= 8.91 \\
 &= 89.14
 \end{aligned}$$

**Cumulative dB=89.14**

Building Construction	No. Reqd. <sup>a</sup>	dBA
Equipment <sup>d</sup>	per 10 acres	50 ft
Stationary		
Generator Set	1	81.00
Industrial Saw	1	83.00
Welder	1	74.00

Cumulative dB=10\*LOG[10EXP(0.1\*81)+ 10EXP(0.1\*83)+10EXP(0.1\*74)]

= 350537637

LOG350537637

= 8.54

10\*8.54

= 85.45

**Cumulative dB=85.45**

### Distance Calculations

$$dB2 = dB1 - 10 * (a) \text{LOG}(R2/R1)$$

a=conventional drop-off rate coefficient. a=2.0 for point source, no ground or atmospheric absorption

Grading	Paving	Building Construction
Cumulative dB=91.61	Cumulative dB=89.14	Cumulative dB=85.45

*Residents 700 feet south of construction activities on Sweet Bay Circle*  
 $dB2 = dB1 - 10 * (2) \text{LOG}(700/50)$

Grading	Paving	Building Construction
68.69	66.22	62.53

*Residents approximately 950 feet southeast of construction on Ash Drive*

Grading	Paving	Building Construction
66.03	63.56	59.87

*Residents of the Poquito Bayou Neighborhood approximately 1,600 feet southwest of construction*

Grading	Paving	Building Construction
61.51	59.04	55.35

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## **APPENDIX E**

### **CALCULATIONS TO SUPPORT THE AIR QUALITY IMPACT ANALYSES**



<b>Summary</b>	Summarizes total emissions by calendar year.
<b>Combustion</b>	Estimates emissions from non-road equipment exhaust as well as painting.
<b>Fugitive</b>	Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust.
<b>Grading</b>	Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions.
<b>Commuter Emissions</b>	Estimates the total emissions from personally-owned vehicles from additional personnel coming to Eglin AFB.
<b>AQCR Tier Report</b>	Summarizes total emissions for the Mobile (Alabama)-Pensacola-Panama City (Florida)-Southern Mississippi Interstate Air Quality Control Region Tier Reports for 2001, to be used to compare project to regional emissions.

### Air Quality Emissions from Alternative 1

	NO <sub>x</sub> (ton)	VOC (ton)	CO (ton)	SO <sub>2</sub> (ton)	PM <sub>10</sub> (ton)	PM <sub>2.5</sub> (ton)	CO <sub>2</sub> (ton)
CY2009	Construction Combustion	15.54	1.83	6.56	0.85	1.05	1.02
	Construction Fugitive Dust	0.00	0.00	0.00	0.00	19.94	2.94
	Construction Commuters	0.87	0.86	8.35	0.01	0.07	0.05
	<b>TOTAL CY2009</b>	<b>16.41</b>	<b>2.69</b>	<b>14.91</b>	<b>0.86</b>	<b>21.06</b>	<b>4.00</b>
CY2010	Construction Combustion	4.05	0.79	1.73	0.21	0.27	0.26
	Construction Commuters	0.43	0.43	4.18	0.01	0.04	0.02
	<b>TOTAL CY2010</b>	<b>4.48</b>	<b>1.22</b>	<b>5.91</b>	<b>0.22</b>	<b>0.31</b>	<b>0.29</b>
CY2011+	Retail and CDC Patrons	33.11	33.41	323.86	0.42	3.48	2.22
							43207

### Air Quality Emissions from Alternative 2

	NO <sub>x</sub> (ton)	VOC (ton)	CO (ton)	SO <sub>2</sub> (ton)	PM <sub>10</sub> (ton)	PM <sub>2.5</sub> (ton)	CO <sub>2</sub> (ton)
CY2009	Construction Combustion	15.90	1.88	6.71	0.85	1.07	1.04
	Construction Fugitive Dust	0.00	0.00	0.00	0.00	19.94	2.94
	Construction Commuters	0.87	0.86	8.35	0.01	0.07	0.05
	<b>TOTAL CY2009</b>	<b>16.77</b>	<b>2.74</b>	<b>15.06</b>	<b>0.86</b>	<b>21.09</b>	<b>4.02</b>
CY2010	Construction Combustion	4.23	0.83	1.80	0.22	0.28	0.28
	Construction Commuters	0.43	0.43	4.18	0.01	0.04	0.02
	<b>TOTAL CY2010</b>	<b>4.66</b>	<b>1.25</b>	<b>5.98</b>	<b>0.22</b>	<b>0.32</b>	<b>0.30</b>
CY2011+	Retail and CDC Patrons	33.11	33.41	323.86	0.42	3.48	2.22
							43207

**Regional Emissions (2001)**

	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
Okaloosa Co.	8,479	19,494	148,737	686	14,231	10,133
ACQR	393,757	312,693	1,842,763	384,685	336,542	137,700

Source: U.S. Environmental Protection Agency. 2001. AirData NET Tier Report. Available online: <<http://www.epa.gov/air/data/geosel.html>>. Accessed June 12, 2008.

**Determination of Significance for Criteria Pollutants (Significance Threshold = 10%)****Alternative 1**

	Point and Area Sources Combined					
	NO <sub>x</sub> (tpy)	VOC (tpy)	CO (tpy)	SO <sub>2</sub> (tpy)	PM <sub>10</sub> (tpy)	PM <sub>2.5</sub> (tpy)
Percent of Co. (2009)	0.19%	0.01%	0.01%	0.12%	0.15%	0.04%
Percent of AQCR (2009)	0.0042%	0.0004%	0.0003%	0.0001%	0.0001%	0.0002%
Percent of Co. (2010)	0.05%	0.01%	0.00%	0.03%	0.002%	0.003%
Percent of AQCR (2010)	0.0011%	0.0004%	0.0003%	0.0001%	0.0001%	0.0002%
Percent of Co. (2011+)	0.39%	0.17%	0.22%	0.06%	0.02%	0.02%
Percent of AQCR (2011+)	0.0084%	0.0107%	0.0176%	0.0001%	0.0010%	0.0016%

## Alternative 1

### Construction Combustion Emissions for CY 2009

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and PM<sub>10</sub> Due to Construction

Includes:

1 100% of Site Clearing & Grading (total: 100 acres)	4,356,000 ft <sup>2</sup>	100 acres
2 66% of Construct Retail Space (total: 750,000 ft <sup>2</sup> )	495,000 ft <sup>2</sup>	11 acres
3 66% of Construct Child Development Center (total: 10 acres)	287,496 ft <sup>2</sup>	7 acres
4 66% of Construct Parking (total: 1,687,500 ft <sup>2</sup> )	1,113,750 ft <sup>2</sup>	26 acres
5 66% of Construct Sidewalks, Pathways, etc. (total: 10 acres)	287,496 ft <sup>2</sup>	7 acres

Assumptions:

All land disturbance/grading area includes building construction, utility installation, landscaping, and paving operations.

Total Building Construction Area:	782,496 ft <sup>2</sup>	(2 and 3)
Total Paved Area:	1,401,246 ft <sup>2</sup>	(4 and 5)
Total Disturbed Area:	4,356,000 ft <sup>2</sup>	(1)
Construction Duration:	1.0 year(s)	
Annual Construction Activity:	230 days/yr	

### Construction Combustion Emissions for CY 2010

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and PM<sub>10</sub> Due to Construction

Includes:

1 0% of Site Clearing & Grading (total: 100 acres)	0 ft <sup>2</sup>	0 acres
2 33% of Construct Retail Space (total: 750,000 ft <sup>2</sup> )	247,500 ft <sup>2</sup>	6 acres
3 33% of Construct Child Development Center (total: 10 acres)	143,748 ft <sup>2</sup>	3 acres
4 33% of Construct Parking (total: 1,687,500 ft <sup>2</sup> )	556,875 ft <sup>2</sup>	13 acres
5 33% of Construct Sidewalks, Pathways, etc. (total: 10 acres)	143,748 ft <sup>2</sup>	3 acres

Assumptions:

All land disturbance/grading area includes building construction, utility installation, landscaping, and paving operations.

Total Building Construction Area:	391,248 ft <sup>2</sup>	(2 and 3)
Total Paved Area:	700,623 ft <sup>2</sup>	(4 and 5)
Total Disturbed Area:	1,091,871 ft <sup>2</sup>	(2 through 5)
Construction Duration:	0.5 year(s)	
Annual Construction Activity:	115 days/yr	

## Emissions Factors Used for Construction Equipment

References: *Guide to Air Quality Assessment, SMAQMD, 2004; and U.S. EPA NONROAD Emissions Model, Version 2005.0.0*

Emission factors are taken from the NONROAD model and were provided to e<sup>2</sup>M by Larry Landman of the Air Quality and Modeling Center

(Landman.Larry@epamail.epa.gov) on 12/14/07. Factors provided are for the weighted average US fleet for CY2007.

Assumptions regarding the type and number of equipment are from SMAQMD Table 3-1 unless otherwise noted.

### Grading

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Bulldozer	1	13.60	0.96	5.50	1.02	0.89	0.87	1456.90
Motor Grader	1	9.69	0.73	3.20	0.80	0.66	0.64	1141.65
Water Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Total per 10 acres of activity	3	41.64	2.58	15.71	0.83	2.55	2.47	4941.53

### Paving

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Paver	1	3.83	0.37	2.06	0.28	0.35	0.34	401.93
Roller	1	4.82	0.44	2.51	0.37	0.43	0.42	536.07
Truck	2	36.71	1.79	14.01	3.27	1.99	1.93	4685.95
Total per 10 acres of activity	4	45.37	2.61	18.58	0.91	2.78	2.69	5623.96

### Building Construction

Equipment <sup>d</sup>	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup> (lb/day)	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Stationary								
Generator Set	1	2.38	0.32	1.18	0.15	0.23	0.22	213.06
Industrial Saw	1	2.62	0.32	1.97	0.20	0.32	0.31	291.92
Welder	1	1.12	0.38	1.50	0.08	0.23	0.22	112.39
Mobile (non-road)								
Truck	1	18.36	0.89	7.00	1.64	1.00	0.97	2342.98
Forklift	1	5.34	0.56	3.33	0.40	0.55	0.54	572.24
Crane	1	9.57	0.66	2.39	0.65	0.50	0.49	931.93
Total per 10 acres of activity	6	39.40	3.13	17.38	3.12	2.83	2.74	4464.51

Note: Footnotes for tables are on following page

**Architectural Coatings**

Equipment	No. Reqd. <sup>a</sup> per 10 acres	NO <sub>x</sub> (lb/day)	VOC <sup>b</sup> (lb/day)	CO (lb/day)	SO <sub>2</sub> <sup>c</sup>	PM <sub>10</sub> (lb/day)	PM <sub>2.5</sub> (lb/day)	CO <sub>2</sub> (lb/day)
Air Compressor	1	3.57	0.37	1.57	0.25	0.31	0.30	359.77
Total per 10 acres of activity	1	3.57	0.37	1.57	0.07	0.31	0.30	359.77

a) The SMAQMD 2004 guidance suggests a default equipment fleet for each activity, assuming 10 acres of that activity, (e.g., 10 acres of grading, 10 acres of paving, etc.). The default equipment fleet is increased for each 10 acre increment in the size of the construction project. That is, a 26 acre project would round to 30 acres and the fleet size would be three times the default fleet for a 10 acre project.

b) The SMAQMD 2004 reference lists emission factors for reactive organic gas (ROG). For the purposes of this worksheet ROG = VOC. The NONROAD model contains emissions factors for total HC and for VOC. The factors used here are the VOC factors.

c) The NONROAD emission factors assume that the average fuel burned in nonroad trucks is 1100 ppm sulfur. Trucks that would be used for the Proposed Actions will all be fueled by highway grade diesel fuel which cannot exceed 500 ppm sulfur. These estimates therefore over-estimate SO<sub>2</sub> emissions by more than a factor of two.

d) Typical equipment fleet for building construction was not itemized in SMAQMD 2004 guidance. The equipment list above was assumed based on SMAQMD 1994 guidance.

**Project-Specific Emissions Factors Summary**

Source	Equipment Multiplier*	Project-Specific Emission Factors (lb/day)						
		NO <sub>x</sub>	VOC	CO	SO <sub>2</sub> **	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
2009								
Grading Equipment	10	416.412	25.770	157.099	8.328	25.455	24.691	49415.263
Demolition Equipment	3	55.068	2.682	21.013	4.906	2.988	2.898	7028.926
Paving Equipment	3	136.102	7.817	55.735	2.722	8.328	8.078	16871.871
Building Construction	2	78.793	6.260	34.765	6.233	5.658	5.488	8929.023
Air Compressor for Architectural Coating	2	7.148	0.746	3.131	0.143	0.619	0.600	719.547
Architectural Coating**			72.094					
2010								
Grading Equipment	1	41.641	2.577	15.710	0.833	2.546	2.469	4941.526
Demolition Equipment	2	63.615	3.771	25.168	1.272	3.846	3.731	7406.147
Paving Equipment	1	45.367	2.606	18.578	0.907	2.776	2.693	5623.957
Building Construction	1	39.396	3.130	17.382	3.116	2.829	2.744	4464.512
Air Compressor for Architectural Coating	1	3.574	0.373	1.565	0.071	0.309	0.300	359.773
Architectural Coating**			50.978					

\*The equipment multiplier is an integer that represents units of 10 acres for purposes of estimating the number of equipment required for the project

\*\*Emission factor is from the evaporation of solvents during painting, per "Air Quality Thresholds of Significance", SMAQMD, 1994

Example: SMAQMD Emission Factor for Grading Equipment NO<sub>x</sub> = (Total Grading NO<sub>x</sub> per 10 acre)\*(Equipment Multiplier.

## Summary of Input Parameters

	Total Area (ft <sup>2</sup> )	Total Area (acres)	Total Days
<b>2009</b>			
Grading:	4,356,000	100.00	14
Paving:	1,401,246	32.17	51
Demolition:	0	0.00	0
Building Construction:	782,496	17.96	230
Architectural Coating	782,496	17.96	20
<b>2010</b>			
Grading:	0	0.00	0
Paving:	700,623	16.08	77
Demolition:	0	0.00	0
Building Construction:	391,248	8.98	115
Architectural Coating	391,248	8.98	20

(from "CY2009 Grading" worksheet)

(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

(from "CY2009 Grading" worksheet)

(per SMAQMD "Air Quality of Thresholds of Significance", 1994)

NOTE: The 'Total Days' estimate for paving is calculated by dividing the total number of acres by 0.21 acres/day, which is a factor derived from the 2005 MEANS Heavy Construction Cost Data, 19th Edition, for 'Asphaltic Concrete Pavement, Lots and Driveways - 6" stone base', which provides an estimate of square feet paved per day. There is also an estimate for 'Plain Cement Concrete Pavement', however the estimate for asphalt is used because it is more conservative. The 'Total Days' estimate for demolition is calculated by dividing the total number of acres by 0.02 acres/day, which is a factor also derived from the 2005 MEANS reference. This is calculated by averaging the demolition estimates from 'Building Demolition - Small Buildings, Concrete', assuming a height of 30 feet for a two-story building; from 'Building Footings and Foundations Demolition - 6" Thick, Plain Concrete'; and from 'Demolish, Remove Pavement and Curb - Concrete to 6" thick, rod reinforced'. Paving is double-weighted since projects typically involve more paving demolition. The 'Total Days' estimate for building construction is assumed to be 230 days, unless project-specific data is known.

## Total Project Emissions by Activity (lbs)

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>2009</b>							
Grading Equipment	5,829.77	360.78	2,199.39	116.60	356.37	345.68	691,814
Paving	6,986.56	401.28	2,861.08	139.73	427.52	414.69	866,089
Building Construction	18,122.31	1,439.71	7,995.86	1,433.52	1,301.36	1,262.32	2,053,675
Architectural Coatings	142.96	1,456.81	62.62	2.86	12.37	12.00	14,391
<b>Total Emissions (lbs):</b>	<b>31,081.60</b>	<b>3,658.58</b>	<b>13,118.94</b>	<b>1,692.71</b>	<b>2,097.62</b>	<b>2,034.69</b>	<b>3,625,969</b>
<b>2010</b>							
Paving	3,493.28	200.64	1,430.54	69.87	213.76	207.35	433,044.68
Building Construction	4,530.58	359.93	1,998.97	358.38	325.34	315.58	513,418.84
Architectural Coatings	71.48	1,027.03	31.31	1.43	6.19	6.00	7,195.47
<b>Total Emissions (lbs):</b>	<b>8,095.34</b>	<b>1,587.59</b>	<b>3,460.81</b>	<b>429.68</b>	<b>545.29</b>	<b>528.93</b>	<b>953,659</b>

## Results: Total Project Annual Emission Rates

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>2009</b>							
Total Project Emissions (lbs)	31,081.60	3,658.58	13,118.94	1,692.71	2,097.62	2,034.69	3,625,969
<b>Total Project Emissions (tons)</b>	<b>15.5408</b>	<b>1.8293</b>	<b>6.5595</b>	<b>0.8464</b>	<b>1.0488</b>	<b>1.0173</b>	<b>1,813</b>
<b>2010</b>							
Total Project Emissions (lbs)	8,095.34	1,587.59	3,460.81	429.68	545.29	528.93	953,658.99
<b>Total Project Emissions (tons)</b>	<b>4.0477</b>	<b>0.7938</b>	<b>1.7304</b>	<b>0.2148</b>	<b>0.2726</b>	<b>0.2645</b>	<b>477</b>

## Alternative 1

### Construction Fugitive Dust Emissions for CY 2009

Calculation of PM<sub>10</sub> Emissions Due to Site Preparation (Uncontrolled).

#### User Input Parameters / Assumptions

Acres graded per year:	100.00	acres/yr	(From "CY2009 Combustion" worksheet)
Grading days/yr:	13.96	days/yr	(From "CY2009 Grading worksheet")
Exposed days/yr:	14	assumed days/yr graded area is exposed	
Grading Hours/day:	8	hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)	
Soil percent silt, s:	8.5 %	(mean silt content; expected range: 0.56 to 23, AP-42 Table 13.2.2-1)	
Soil percent moisture, M:	50 %	( <a href="http://www.cpc.ncep.noaa.gov/soilmst/wrank_frame.html">http://www.cpc.ncep.noaa.gov/soilmst/wrank_frame.html</a> )	
Annual rainfall days, p:	120	days/yr rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)	
Wind speed > 12 mph %, l:	18 %	Wind rose for Eglin AFB, Calendar Year 2004 Air Emissions Inventory, April 2005	
Fraction of TSP, J:	0.5	per California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993, p. A9-99	
Mean vehicle speed, S:	5 mi/hr	(On-site)	
Dozer path width:	8 ft		
Qty construction vehicles:	12.00	vehicles	(From "CY2009 Grading worksheet")
On-site VMT/vehicle/day:	5	mi/veh/day	(Excluding bulldozer VMT during grading)
PM <sub>10</sub> Adjustment Factor k	1.5 lb/VMT		(AP-42 Table 13.2.2-2 12/03 for PM <sub>10</sub> for unpaved roads)
PM <sub>10</sub> Adjustment Factor a	0.9 (dimensionless)		(AP-42 Table 13.2.2-2 12/03 for PM <sub>10</sub> for unpaved roads)
PM <sub>10</sub> Adjustment Factor b	0.45 (dimensionless)		(AP-42 Table 13.2.2-2 12/03 for PM <sub>10</sub> for unpaved roads)
Mean Vehicle Weight W	40 tons		assumed for aggregate trucks
PM <sub>2.5</sub> fraction of PM <sub>10</sub>	14 %		(AP-42 Section 11.9, 7/98, Table 11.9 for Bulldozing overburden)
PM <sub>2.5</sub> fraction of PM <sub>10</sub>	5 %		(AP-42 Section 11.9, 7/98, Table 11.9 for Grading)
PM <sub>2.5</sub> fraction of PM <sub>10</sub>	10 %		(AP-42 Table 13.2.2-2 12/03 'k' factor for PM2.5 for vehicle traffic on unpaved roads)
PM <sub>2.5</sub> fraction of PM <sub>10</sub>	15 %		(AP-42 Section 13.2.5, 11/06, page 13.2.6-3 for wind-generated emissions)

TSP - Total Suspended Particulate

VMT - Vehicle Miles Traveled

## Emissions Due to Soil Disturbance Activities

### Operation Parameters (Calculated from User Inputs)

Grading duration per acre	1.1 hr/acre	
Bulldozer mileage per acre	1 VMT/acre	(Miles traveled by bulldozer during grading)
Construction VMT per day	60 VMT/day	
Construction VMT per acre	8.4 VMT/acre	(Travel on unpaved surfaces within site)

Operation	Empirical Equation	Units	AP-42 Section (5th Edition)
Bulldozing	$0.75(s^{1.5})/(M^{1.4})$	lbs/hr	Table 11.9-1, Overburden
Grading	$(0.60)(0.051)s^{2.0}$	lbs/VMT	Table 11.9-1,
Vehicle Traffic (unpaved roads)	$[(k(s/12)^a (W/3)^b)] \ [(365-P)/365]$	lbs/VMT	Section 13.2.2

Source: Compilation of Air Pollutant Emission Factors, Vol. I, USEPA AP-42, Section 11.9 dated 10/98 and Section 13.2 dated 12/03

### Calculation of PM<sub>10</sub> Emission Factors for Each Operation

Operation	Emission Factor (mass/ unit)	Operation Parameter	Emission Factor (lbs/ acre)
Bulldozing	0.08 lbs/hr	1.1 hr/acre	0.10 lbs/acre
Grading	0.77 lbs/VMT	1 VMT/acre	0.80 lbs/acre
Vehicle Traffic (unpaved roads)	2.37 lbs/VMT	8.4 VMT/acre	19.90 lbs/acre

### Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: California Environmental Quality Act (CEQA) Air Quality Handbook, SCAQMD, 1993.

Soil Piles EF =  $1.7(s/1.5)[(365 - p)/235](l/15)(J) = (s)(365 - p)(l)(J)/(3110.2941)$ , p. A9-99.

Soil Piles EF = 6 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)  
Soil Piles EF = 0.6 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

### Calculation of Annual PM<sub>10</sub> Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	PM <sub>10</sub> Emissions lbs/yr	PM <sub>10</sub> Emissions tons/yr	PM <sub>2.5</sub> Emissions tons/yr
Bulldozing	0.10 lbs/acre	100.00	NA	10	0.005	0.0007
Grading	0.80 lbs/acre	100.00	NA	80	0.040	0.002
Vehicle Traffic	19.90 lbs/acre	100.00	NA	1,990	0.995	0.100
Erosion of Soil Piles	0.60 lbs/acre/day	100.00	14	840	0.420	0.063
Erosion of Graded Surface	26.40 lbs/acre/day	100.00	14	36,960	18.480	2.772
<b>TOTAL</b>				<b>39,880</b>	<b>19.94</b>	<b>2.937</b>

Soil Disturbance EF: 20.80 lbs/acre  
Wind Erosion EF: 27 lbs/acre/day

Back calculate to get EF: 28.56 lbs/acre/grading day

## Alternative 1

### Construction (Grading) Schedule for CY 2009

Estimate of time required to grade a specified area.

#### Input Parameters

Construction area: 100.00 acres/yr (from "CY2009 Combustion" Worksheet)  
Qty Equipment: 12.00 (calculated based on 3 pieces of equipment for every 10 acres)

#### Assumptions

Terrain is mostly flat.

An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.

200 hp bulldozers are used for site clearing.

300 hp bulldozers are used for stripping, excavation, and backfill.

Vibratory drum rollers are used for compacting.

Stripping, Excavation, Backfill and Compaction require an average of two passes each.

Excavation and Backfill are assumed to involve only half of the site.

#### Calculation of days required for one piece of equipment to grade the specified area.

Reference: Means Heavy Construction Cost Data, 19th Ed., R. S. Means, 2005.

Means Line No.	Operation	Description	Output	Units	Acres per equip-day	equip-days per acre	Acres/yr (project-specific)	Equip-days per year
2230 200 0550	Site Clearing	Dozer & rake, medium brush	8	acre/day	8	0.13	100.00	12.50
2230 500 0300	Stripping	Topsoil & stockpiling, adverse soil	1,650	cu. yd/day	2.05	0.49	100.00	48.89
2315 432 5220	Excavation	Bulk, open site, common earth, 150' haul	800	cu. yd/day	0.99	1.01	50.00	50.42
2315 120 5220	Backfill	Structural, common earth, 150' haul	1,950	cu. yd/day	2.42	0.41	50.00	20.68
2315 310 5020	Compaction	Vibrating roller, 6 " lifts, 3 passes	2,300	cu. yd/day	2.85	0.35	100.00	35.07
TOTAL								167.56

#### Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 167.56

Qty Equipment: 12.00

Grading days/yr: 13.96

## Alternative 2

### Construction Combustion Emissions for CY 2009

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and PM<sub>10</sub> Due to Construction

Includes:

1 100% of Site Clearing & Grading (total: 100 acres)	4,356,000 ft <sup>2</sup>	100 acres
2 66% of Construct Retail Space (total: 850,000 ft <sup>2</sup> )	561,000 ft <sup>2</sup>	13 acres
3 66% of Construct Child Development Center (total: 10 acres)	287,496 ft <sup>2</sup>	7 acres
4 66% of Construct Parking (total: 1,912,500 ft <sup>2</sup> )	1,262,250 ft <sup>2</sup>	29 acres
5 66% of Construct Sidewalks, Pathways, etc. (total: 10 acres)	287,496 ft <sup>2</sup>	7 acres

Assumptions:

All land disturbance/grading area includes building construction, utility installation, landscaping, and paving operations.

Total Building Construction Area:	848,496 ft <sup>2</sup>	(2 and 3)
Total Paved Area:	1,549,746 ft <sup>2</sup>	(4 and 5)
Total Disturbed Area:	4,356,000 ft <sup>2</sup>	(1)
Construction Duration:	1.0 year(s)	
Annual Construction Activity:	230 days/yr	

### Construction Combustion Emissions for CY 2010

Combustion Emissions of VOC, NO<sub>x</sub>, SO<sub>2</sub>, CO, PM<sub>2.5</sub>, and PM<sub>10</sub> Due to Construction

Includes:

1 0% of Site Clearing & Grading (total: 100 acres)	0 ft <sup>2</sup>	0 acres
2 33% of Construct Retail Space (total: 850,000 ft <sup>2</sup> )	280,500 ft <sup>2</sup>	6 acres
3 33% of Construct Child Development Center (total: 10 acres)	143,748 ft <sup>2</sup>	3 acres
4 33% of Construct Parking (total: 1,912,500 ft <sup>2</sup> )	631,125 ft <sup>2</sup>	14 acres
5 33% of Construct Sidewalks, Pathways, etc. (total: 10 acres)	143,748 ft <sup>2</sup>	3 acres

Assumptions:

All land disturbance/grading area includes building construction, utility installation, landscaping, and paving operations.

Total Building Construction Area:	424,248 ft <sup>2</sup>	(2 and 3)
Total Paved Area:	774,873 ft <sup>2</sup>	(4 and 5)
Total Disturbed Area:	1,199,121 ft <sup>2</sup>	(2 through 5)
Construction Duration:	0.5 year(s)	
Annual Construction Activity:	115 days/yr	

### Results: Total Project Annual Emission Rates

	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>2009</b>							
Total Project Emissions (lbs)	31,807.48	3,759.85	13,416.20	1,707.22	2,142.04	2,077.78	3,715,953
<b>Total Project Emissions (tons)</b>	<b>15.9037</b>	<b>1.8799</b>	<b>6.7081</b>	<b>0.8536</b>	<b>1.0710</b>	<b>1.0389</b>	<b>1,858</b>
<b>2010</b>							
Total Project Emissions (lbs)	8,458.28	1,650.57	3,609.44	436.93	567.49	550.47	998,650.64
<b>Total Project Emissions (tons)</b>	<b>4.2291</b>	<b>0.8253</b>	<b>1.8047</b>	<b>0.2185</b>	<b>0.2837</b>	<b>0.2752</b>	<b>499</b>

## Alternative 2

### Calculation of Annual PM<sub>10</sub> Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	PM <sub>10</sub> Emissions lbs/yr	PM <sub>10</sub> Emissions tons/yr	PM <sub>2.5</sub> Emissions tons/yr
Bulldozing	0.10 lbs/acre	100.00	NA	10	0.005	0.0007
Grading	0.80 lbs/acre	100.00	NA	80	0.040	0.002
Vehicle Traffic	19.90 lbs/acre	100.00	NA	1,990	0.995	0.100
Erosion of Soil Piles	0.60 lbs/acre/day	100.00	14	840	0.420	0.063
Erosion of Graded Surface	26.40 lbs/acre/day	100.00	14	36,960	18.480	2.772
<b>TOTAL</b>				<b>39,880</b>	<b>19.94</b>	<b>2.937</b>

Soil Disturbance EF: 20.80 lbs/acre

Wind Erosion EF: 27 lbs/acre/day

Back calculate to get EF: 28.56 lbs/acre/grading day

## Alternative 2

### Construction (Grading) Schedule for CY 2009

Estimate of time required to grade a specified area.

#### Input Parameters

Construction area: 100.00 acres/yr (from "CY2009 Combustion" Worksheet)  
Qty Equipment: 12.00 (calculated based on 3 pieces of equipment for every 10 acres)

#### Assumptions

Terrain is mostly flat.

An average of 6" soil is excavated from one half of the site and backfilled to the other half of the site; no soil is hauled off-site or borrowed.

200 hp bulldozers are used for site clearing.

300 hp bulldozers are used for stripping, excavation, and backfill.

Vibratory drum rollers are used for compacting.

Stripping, Excavation, Backfill and Compaction require an average of two passes each.

Excavation and Backfill are assumed to involve only half of the site.

#### Calculation of days required for the indicated pieces of equipment to grade the designated acreage.

(Equip)(day)/yr: 167.56  
Qty Equipment: 12.00  
Grading days/yr: 13.96

## Privately-Owned Vehicle Emissions from Construction Workers (2009 and 2010)

The daily commute of construction workers going to and from the project site would contribute to air emissions during the construction period.

Assumptions:

- 150 construction workers onsite per day
- 50 miles traveled roundtrip per worker per day
- 230 days of construction activity in 2009
- 115 days of construction activity in 2010

### Vehicle Miles Traveled (VMT)

VMT in 2009: **1,725,000 miles**

VMT in 2010: **862,500 miles**

(VMT = X construction workers \* Y miles/worker/day \* 345 days)

Vehicle Class: <8,500 pounds

Scenario Year: 2009 (assumes all model years in the range of 1965 to 2009)

Emissions Factors (in pounds/mile)						
NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
1.01E-03	9.92E-04	9.69E-03	1.07E-05	8.60E-05	5.38E-05	1.10E+00

Source: South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Last updated November 9, 2007. Available online: <<http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>>. Accessed January 23, 2008.

Note: Assumed that ROG = VOC, for purposes of analysis.

## Estimated Air Pollutant Emissions Associated with Construction Vehicles (2009 and 2010):

Proposed Construction Worker Emissions (in tons per year)						
	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2009	0.867	0.856	8.354	0.009	0.074	0.046
2010	0.433	0.428	4.177	0.005	0.037	0.023

(Vehicle miles/year) \* (Emissions Factor in pounds/mile) \* (1 ton/2000 pounds)

## Privately-Owned Vehicle Emissions from Retail and CDC Activities

The daily commute of construction works heading to and from the project site would contribute to air emissions during the construction period.

Assumptions:

21477 people are total proposed workers and customers

Source: *ITE Trip Generation Manual, 7th edition, 2003.*

Assumes the maximum scenario of workers and commuters. See *Transporation Analysis.*

10 miles traveled roundtrip per worker per day

365 days per year

Vehicle Miles Traveled (VMT)

VMT: **78,391,050 miles**

(VMT = X construction workers \* Y miles/worker/day \* 345 days

Vehicle Class: <8,500 pounds

Scenario Year: 2011 (assumes all model years in the range of 1967 to 2011)

Proposed Emissions Factors (in pounds/mile)						
NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
8.45E-04	8.52E-04	8.26E-03	1.08E-05	8.88E-05	5.65E-05	1.10E+00

Source: *South Coast Air Quality Management District. EMFAC 2007 (ver 2.3) On-Road Emissions Factors. Last updated November 9, 2007. Available online: <<http://www.aqmd.gov/ceqa/handbook/onroad/onroad.html>>. Accessed January 23, 2008.*

Note: Assumed that ROG = VOC, for purposes of analysis.

## Estimated Air Pollutant Emissions Associated with Retail and CDC Patrons:

Proposed	Emissions (in tons per year)						
	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
	<b>33.105</b>	<b>33.408</b>	<b>323.863</b>	<b>0.422</b>	<b>3.480</b>	<b>2.216</b>	<b>43207.248</b>

(Vehicle miles/year) \* (Emissions Factor in pounds/mile) \* (1 ton/2000 pounds)

## Mobile (Alabama)-Pensacola-Panama City (Florida)-Southern Mississippi Interstate Air Quality Control Region

The Mobile (Alabama)-Pensacola-Panama City (Florida)-Southern Mississippi Interstate Air Quality Control Region includes the following counties (40 CFR 81.68):

Baldwin, Escambia, and Mobile, Alabama; Bay, Calhoun, Escambia, Gulf, Holmes, Jackson, Okaloosa, Santa Rosa, Walton, and Washington, Florida; and Adams, Amite, Claiborne, Clarke, Copiah, Covington, Forrest, Franklin, George, Greene, Hancock, Harrison, Hinds, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Lamar, Lauderdale, Lawrence, Lincoln, Madison, Marion, Newton, Pearl River, Perry, Pike, Rankin, Scott, Simpson, Smith, Stone, Walthall, Warren, Wayne, and Wilkinson, Mississippi.

	Area Source Emissions (tpy)						Point Source Emissions (tpy)						Combined (tpy)					
	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	NO <sub>x</sub>	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Okaloosa Co. Florida	7,073	11,110	100,247	671	8,927	4,830	1,406	8,384	48,490	15	5,304	5,303	8,479	19,494	148,737	686	14,231	10,133
Total AQCR	203,470	261,491	1,712,537	25,629	274,094	88,896	190,287	51,022	130,228	359,056	62,448	48,803	393,757	312,693	1,842,763	384,685	336,542	137,700

Source: U.S. Environmental Protection Agency. 2001. AirData NET Tier Report. Available online: <<http://www.epa.gov/air/data/geosel.html>>. Accessed June 12, 2008.

Note: Area Sources = Nonroad Mobile Sources + Onroad Mobile Sources + Nonpoint Sources

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## **APPENDIX F**

### **COASTAL ZONE MANAGEMENT ACT CONSISTENCY COORDINATION**





# Florida Department of Environmental Protection

Charlie Crist  
Governor

Jeff Kottkamp  
Lt. Governor

Michael W. Sole  
Secretary

October 20, 2008

Mr. Stephen G. Pyle, Project Manager  
engineering-environmental Management, Inc.  
2751 Prosperity Avenue, Suite 200  
Fairfax, VA 22031

RE: Department of the Air Force - Draft Environmental Assessment Addressing an Army and Air Force Exchange Service (AAFES) Lifestyle Center at Eglin Air Force Base - Okaloosa County, Florida.  
SAI # FL200809084423C

Dear Mr. Pyle:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced Draft Environmental Assessment (DEA).

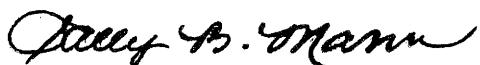
The Florida Department of Environmental Protection (DEP), Northwest District Office in Pensacola comments that site improvements related to the proposed activity must take cleanup activities at the AOC 54 site into account. The DEP advises the applicant to direct questions regarding waste cleanup activities to Ms. Karen Shea at DEP at (850) 595-8300, ext. 1215. The proposed project will require an Environmental Resource Permit (ERP) under Chapter 62-346, *Florida Administrative Code*. Per the current operating agreement, this project would be reviewed by the Northwest Florida Water Management District (NWFWM) unless there are proposed wetland impacts. If the project requires wetland impacts, then it would be reviewed by the DEP Northwest District Office for both stormwater management and wetland impacts. For ERP permitting information, please contact Mr. Lee Marchman at the NWFWM, phone (850) 921-2986, or Mr. Cliff Street at DEP, phone (850) 595-8300, ext. 1135. In addition, the project will most likely require both Potable Water and Domestic Wastewater permits. Please contact Mr. Bill Evans at DEP's Northwest District Office at (850) 595-8300, ext. 1168 with questions regarding permits required for wastewater facilities and contact Mr. John Pope at ext. 1145 for questions regarding potable water distribution system permitting.

Mr. Stephen G. Pyle  
October 20, 2008  
Page 2 of 2

Based on the information contained in the subject DEA and the comments provided by our reviewing agencies, the state has determined that, at this stage, the proposed project is consistent with the Florida Coastal Management Program (FCMP). The issues identified by the state agencies must, however, be addressed prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposed project. Should you have any questions regarding this letter, please contact Ms. Lori Cox at (850) 245-2168.

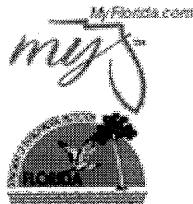
Yours sincerely,



Sally B. Mann, Director  
Office of Intergovernmental Programs

SBM/lec  
Enclosures

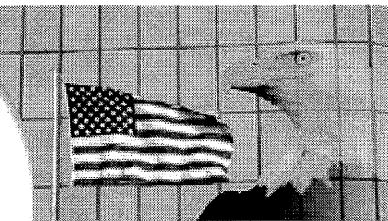
cc: Darryl Boudreau, DEP, Northwest District  
Paul Bolduc, USAF, Eglin AFB



# Florida

Department of Environmental Protection

"More Protection, Less Process"



Categories

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### Project Information

<b>Project:</b>	FL200809084423C
<b>Comments Due:</b>	10/13/2008
<b>Letter Due:</b>	10/20/2008
<b>Description:</b>	DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT ADDRESSING AN ARMY AND AIR FORCE EXCHANGE SERVICE (AAFES) LIFESTYLE CENTER AT EGLIN AIR FORCE BASE - OKALOOSA COUNTY, FLORIDA.
<b>Keywords:</b>	USAF - AAFES LIFESTYLE CENTER AT EGLIN AFB - OKALOOSA CO.
<b>CFDA #:</b>	12.200

### Agency Comments:

WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL

No Comments

OKALOOSA - OKALOOSA COUNTY

COMMUNITY AFFAIRS - FLORIDA DEPARTMENT OF COMMUNITY AFFAIRS

DCA has reviewed this application and found the project consistent with the Okaloosa County Comprehensive Plan and has no concerns or comments.

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

NO COMMENT BY SCOTT SANDERS ON 9/12/08.

STATE - FLORIDA DEPARTMENT OF STATE

No Comments Received

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

No Comments Received

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The DEP Northwest District Office in Pensacola comments that site improvements related to the proposed activity must take cleanup activities at the AOC 54 site into account. The DEP advises the applicant to direct questions regarding waste cleanup activities to Ms. Karen Shea at DEP at (850) 595-8300, ext. 1215. The proposed project will require an Environmental Resource Permit (ERP) under Chapter 62-346, Florida Administrative Code. Per the current operating agreement, this project would be reviewed by the Northwest Florida Water Management District (NFWMD) unless there are proposed wetland impacts. If the project requires wetland impacts, then it would be reviewed by the DEP Northwest District Office for both stormwater management and wetland impacts. For ERP permitting information, please contact Mr. Lee Marchman at the NFWMD, phone (850) 921-2986, or Mr. Cliff Street at DEP, phone (850) 595-8300, ext. 1135. In addition, the project will most likely require both Potable Water and Domestic Wastewater permits. Please contact Mr. Bill Evans at DEP's Northwest District Office at (850) 595-8300, ext. 1168 with questions regarding permits required for wastewater facilities and contact Mr. John Pope at ext. 1145 for questions regarding potable water distribution system permitting.

NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT

No Comment/Consistent

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47  
TALLAHASSEE, FLORIDA 32399-3000  
TELEPHONE: (850) 245-2161  
FAX: (850) 245-2190

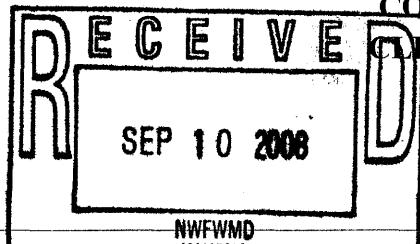
COUNTY: OKALOOSA

DATE: 9/5/2008

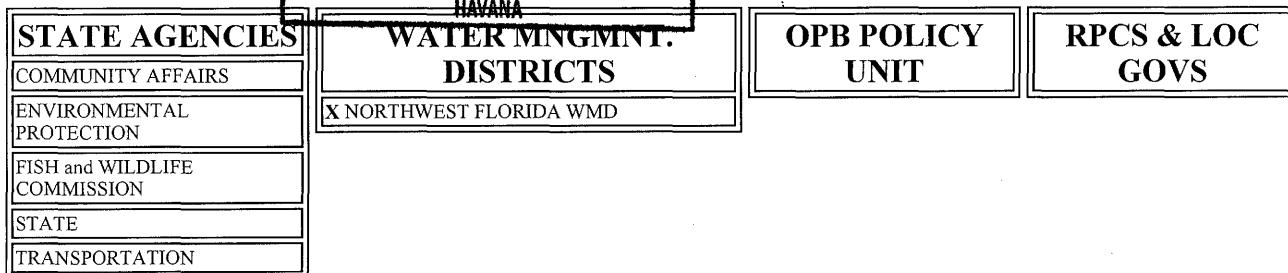
COMMENTS DUE DATE: 10/13/2008

CLEARANCE DUE DATE: 10/20/2008

SAI#: FL200809084423C



MESSAGE:



The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.
- X Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.
- Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.
- Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

**Project Description:**

DEPARTMENT OF THE AIR FORCE - DRAFT ENVIRONMENTAL ASSESSMENT ADDRESSING AN ARMY AND AIR FORCE EXCHANGE SERVICE (AAFES) LIFESTYLE CENTER AT EGLIN AIR FORCE BASE - OKALOOSA COUNTY, FLORIDA.

**To: Florida State Clearinghouse**

AGENCY CONTACT AND COORDINATOR (SCH)  
3900 COMMONWEALTH BOULEVARD MS-47  
TALLAHASSEE, FLORIDA 32399-3000  
TELEPHONE: (850) 245-2161  
FAX: (850) 245-2190

**EO. 12372/NEPA Federal Consistency**

No Comment  
 Comment Attached  
 Not Applicable

No Comment/Consistent  
 Consistent/Comments Attached  
 Inconsistent/Comments Attached  
 Not Applicable

**From:**

Division/Bureau: \_\_\_\_\_

NWFWM  
Resource Management Div.

Reviewer: \_\_\_\_\_

Duncan J. Cairns

Date 16 SEPT 2008

Date: \_\_\_\_\_

**RECEIVED**

SEP 23 2008

DEP Office of  
Intergov'tl Programs

## **FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION**

### **Introduction**

This document provides the State of Florida with the U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 C.F.R. Part 930 sub-part C. The information in this Consistency Determination is provided pursuant to 15 C.F.R. Section 930.39 and Section 307 of the Coastal Zone Management Act, 16 U.S.C. § 1456, as amended, and its implementing regulations at 15 C.F.R. Part 930.

This federal consistency determination addresses the Proposed Action for the Army and Air Force Exchange Service (AAFES) Lifestyle Center on Eglin Air Force Base (AFB), Florida (Figure 1).

### **Proposed Federal agency action:**

AAFES proposes to construct a Lifestyle Center at Eglin AFB. The Lifestyle Center would be constructed on 100 acres of an approximate 200-acre parcel of the Eglin AFB Reservation Area (Figures 2 and 3). The Proposed Action consists of constructing approximately 750,000 ft<sup>2</sup> (17 acres) of retail space in a town center style configuration (Figure 4). Based on the number of spaces (3,750), the total parking lot size, including drive lanes and access roads, would be approximately 1,687,500 ft<sup>2</sup> (39 acres). In addition to the area taken up by retail space and parking, approximately 10 acres would be used for sidewalks, pathways, courtyards, walking zones, and other elements required to tie the Lifestyle Center together. A child development center (CDC) is also planned to be integrated into the Lifestyle Center and would occupy 10 acres of the site. The balance of the 100-acre site, approximately 24 acres, would be used for landscaping or open green space, or other preservation needs.

The proposed Lifestyle Center would be constructed by private developers under a public-private venture scenario. The public-private venture developer would be required to integrate green design wherever feasible through the use of energy and water efficient building techniques and equipment, the use of recycled materials, and the avoidance or enhancement of existing environmental features of the proposed site. Eglin AFB would require the use of xeric landscape design throughout the proposed Lifestyle Center; and any deviation from this requirement would require written justification.

### **Federal Consistency Review**

Statutes addressed as part of the Florida Coastal Zone Management Program consistency review and considered in the analysis of the Proposed Action are discussed in the following table.

Pursuant to 15 C.F.R. § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 C.F.R. § 930.41(b). Florida's concurrence will be presumed if Eglin AFB does not receive its response on the 60th day from receipt of this determination.

### **Florida Coastal Management Program Consistency Review**

<b>Statute</b>	<b>Consistency</b>	<b>Scope</b>
<i>Chapter 161 Beach and Shore Preservation</i>	<p>The Proposed Action would not affect beach and shore management, specifically as it pertains to:</p> <ul style="list-style-type: none"> <li>• The Coastal Construction Permit Program.</li> <li>• The Coastal Construction Control Line (CCCL) Permit Program.</li> <li>• The Coastal Zone Protection Program.</li> </ul>	Authorizes the Bureau of Beaches and Coastal Systems within DEP to regulate construction on or seaward of the states' beaches.
<i>Chapter 163, Part II Growth Policy; County and Municipal Planning; Land Development Regulation</i>	The Proposed Action would not affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
<i>Chapter 186 State and Regional Planning</i>	The Proposed Action would not affect state plans for water use, land development or transportation.	Details state-level planning efforts. Requires the development of special statewide plans governing water use, land development, and transportation.
<i>Chapter 252 Emergency Management</i>	<p>The Proposed Action would not affect the state's vulnerability to natural disasters.</p> <p>The Proposed Action would not affect emergency response and evacuation procedures.</p>	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
<i>Chapter 253 State Lands</i>	All activities would occur on federal property; therefore the Proposed Action would not affect state or public lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
<i>Chapter 258 State Parks and Preserves</i>	The Proposed Action would not affect state parks, recreational areas and aquatic preserves.	Addresses administration and management of state parks and preserves.
<i>Chapter 259 Land Acquisition for Conservation or Recreation</i>	The Proposed Action would not affect tourism and/or outdoor recreation.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.

Chapter 260 <i>Recreational Trails System</i>	The Proposed Action would not include the acquisition of land and would not affect the Greenways and Trails Program.	Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system.
Chapter 375 <i>Multipurpose Outdoor Recreation; Land Acquisition, Management, and Conservation</i>	The Proposed Action would not affect opportunities for recreation on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.
Chapter 267 <i>Historical Resources</i>	<p>96<sup>th</sup> CEG/CEVH, Cultural Resources has determined that soil disturbance associated with the Proposed Action would have a direct adverse impact on two eligible sites within the northern portion of the property. Avoidance or mitigation of the two archaeological sites would be necessary, per Eglin AFB's current programmatic agreement regarding "Preservation and Protection of Historic and Archaeological Resources". If avoidance is possible, Cultural Resources has recommended that a fence be constructed to include the sites and buffer zone. Depending upon the effective protection provided by a fence, long-term impact on the sites could occur from the removal of archaeological artifacts, which would impact the cultural and historic setting of Eglin AFB. If avoidance is not feasible, mitigation of the two sites is required to properly comply with Section 106 of the National Historic Preservation Act (NHPA), and coordination with the Florida Division of Historic Resources should be initiated to identify appropriate mitigation strategies.</p> <p>In the event that additional archaeological resources are inadvertently discovered during construction, 96th CEG/CEVH, Cultural Resources Branch would be notified immediately and further ground-disturbing activities would cease in that area. Identified resources would be managed in compliance with federal law and Air Force regulations.</p> <p>Therefore, the Proposed Action would be consistent with the State's policies concerning the protection cultural resources.</p>	Addresses management and preservation of the state's archaeological and historical resources.
Chapter 288	The Proposed Action would not affect	Provides the framework for promoting

<i>Commercial Development and Capital Improvements</i>	future business opportunities on state lands, or the promotion of tourism in the region.	and developing the general business, trade, and tourism components of the state economy.
Chapter 334 <i>Transportation Administration</i>	The Proposed Action would not adversely affect transportation; however, traffic signal operational details and turn-lane storage requirements would need to be developed. Additionally, the access intersections should be designed and implemented with the lane configurations as shown in section 3.9 of the Environmental Assessment.	Addresses the state's policy concerning transportation administration.
Chapter 339 <i>Transportation Finance and Planning</i>	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 370 <i>Saltwater Fisheries</i>	The Proposed Action would not affect saltwater fisheries.	Addresses management and protection of the state's saltwater fisheries.
Chapter 372 <i>Wildlife</i>	Prior to project initiation a gopher tortoise survey is required. If a gopher tortoise burrow cannot be avoided, then the tortoise would be relocated in accordance with the Florida Fish and Wildlife Conservation Commission (FWC) protocols.  Therefore, the Proposed Action would be consistent with the State's policies concerning the protection of wildlife and other natural resources.	Addresses the management of the wildlife resources of the state.
Chapter 373 <i>Water Resources</i>	Eglin's Water Resources Section, 96 <sup>th</sup> CEG/CEVCE, would coordinate all applicable permits in accordance with the Florida Administrative Code (FAC).  The Proposed Action would increase the potential for impact from the increased rate and volume of stormwater runoff, due to an increase in impervious surface area and altered storm water flows. An Environmental Resource Permit (ERP) from the Northwest Florida Water Management District (NWFWM) would be required. Best Management Practices (BMPs) such as erosion and sediment controls and stormwater management measures would be implemented to control erosion and stormwater runoff. Additionally, 24 acres of green space would be retained at the proposed site and storm water retention would be constructed.  Applicable permitting requirements would be satisfied in accordance with 62-346 of the FAC and National Pollutant Discharge	Addresses the state's policy concerning water resources.

	<p>Elimination System (NPDES). Eglin AFB would submit a notice of intent to use the generic permit for stormwater discharge under the NPDES program prior to project initiation according to Section 403.0885, Florida Statutes (FS).</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the water resources of the state.</p>	
<p><i>Chapter 376 Pollutant Discharge Prevention and Removal</i></p>	<p>Any construction area larger than one acre would require an NPDES General Permit under 40 CFR 122.26(b) (14) (x). A stormwater pollution prevention plan would also be required under the NPDES permit before beginning construction activities.</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the transfer, storage, or transportation of pollutants.</p>	<p>Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.</p>
<p><i>Chapter 377 Energy Resources</i></p>	<p>The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.</p>	<p>Addresses regulation, planning, and development of oil and gas resources of the state.</p>
<p><i>Chapter 380 Land and Water Management</i></p>	<p>The Proposed Action would not affect development of state lands with regional (i.e. more than one county) impacts. The Proposed Action would not include changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing or construction.</p>	<p>Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.</p>
<p><i>Chapter 381 Public Health, General Provisions</i></p>	<p>The Proposed Action would not affect the state's policy concerning the public health system.</p>	<p>Establishes public policy concerning the state's public health system.</p>
<p><i>Chapter 388 Mosquito Control</i></p>	<p>The Proposed Action would not affect mosquito control efforts.</p>	<p>Addresses mosquito control effort in the state.</p>
<p><i>Chapter 403 Environmental Control</i></p>	<p>Eglin's Water Resources Section, 96<sup>th</sup> CEG/CEVCE, would coordinate all applicable permits in accordance with the FAC.</p> <p>Air quality impacts from the Proposed Action would be minimal. Eglin AFB would take reasonable precautions to minimize fugitive particulate (dust) emissions during any construction activities in accordance with FAC 62-296.320. Eglin</p>	<p>Establishes public policy concerning environmental control in the state.</p>

	<p>AFB has a Title V permit; issuance of an air construction permit from FDEP would be required prior to beginning the proposed construction activities (F.A.C. 62-210.300).</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding water quality, air quality, pollution control, solid waste management, or other environmental control efforts.</p>	
<p>Chapter 582 <i>Soil and Water Conservation</i></p>	<p>All applicable BMPs, such as erosion and sediment controls and stormwater management measures would be implemented to minimize erosion and storm water run-off, and to regulate sediment control.</p> <p>Therefore, the Proposed Action would not affect soil and water conservation efforts.</p>	<p>Provides for the control and prevention of soil erosion.</p>



Figure 1. Eglin AFB, Florida



**Figure 2. Location of Project Area on Eglin AFB**

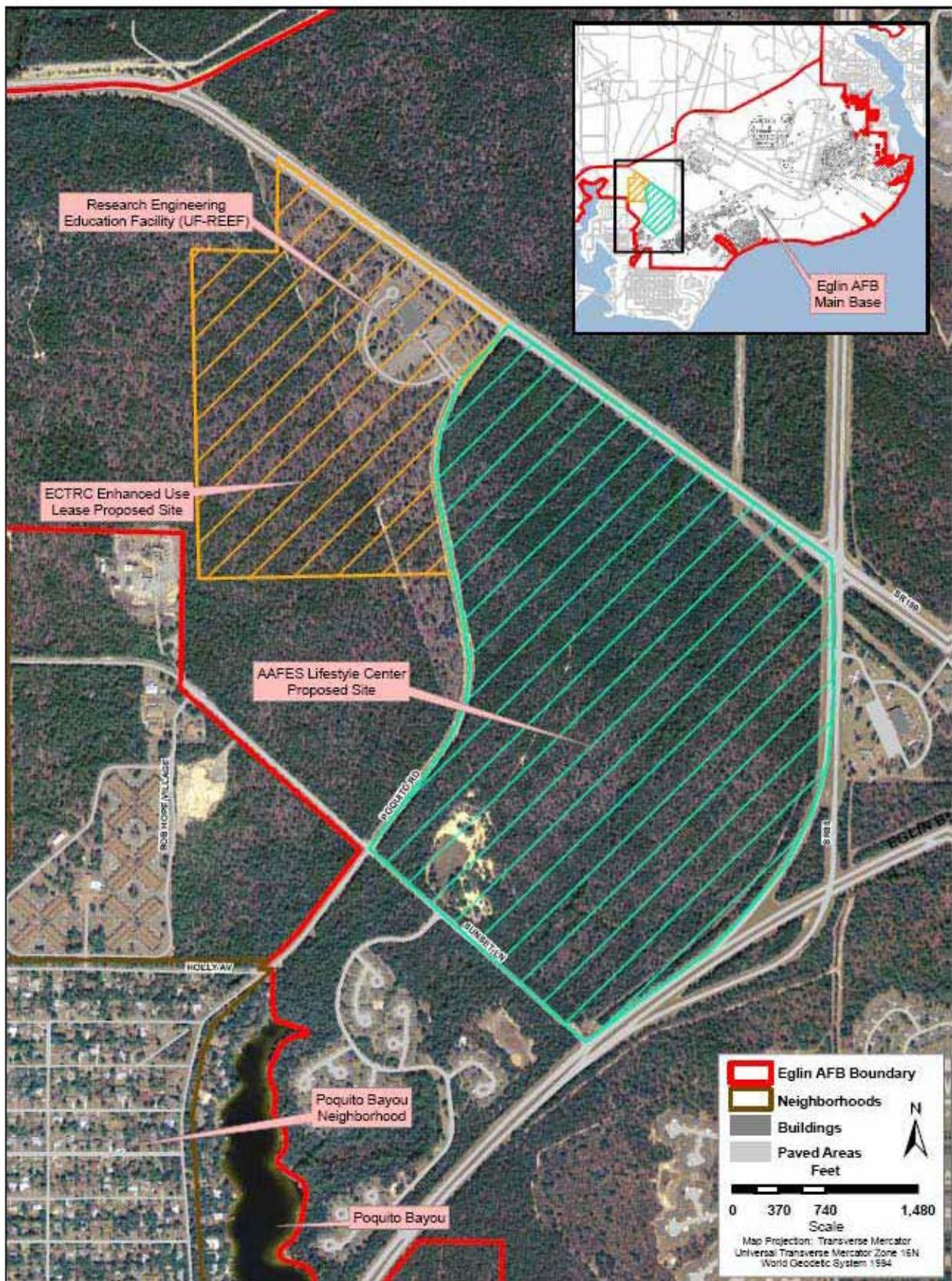
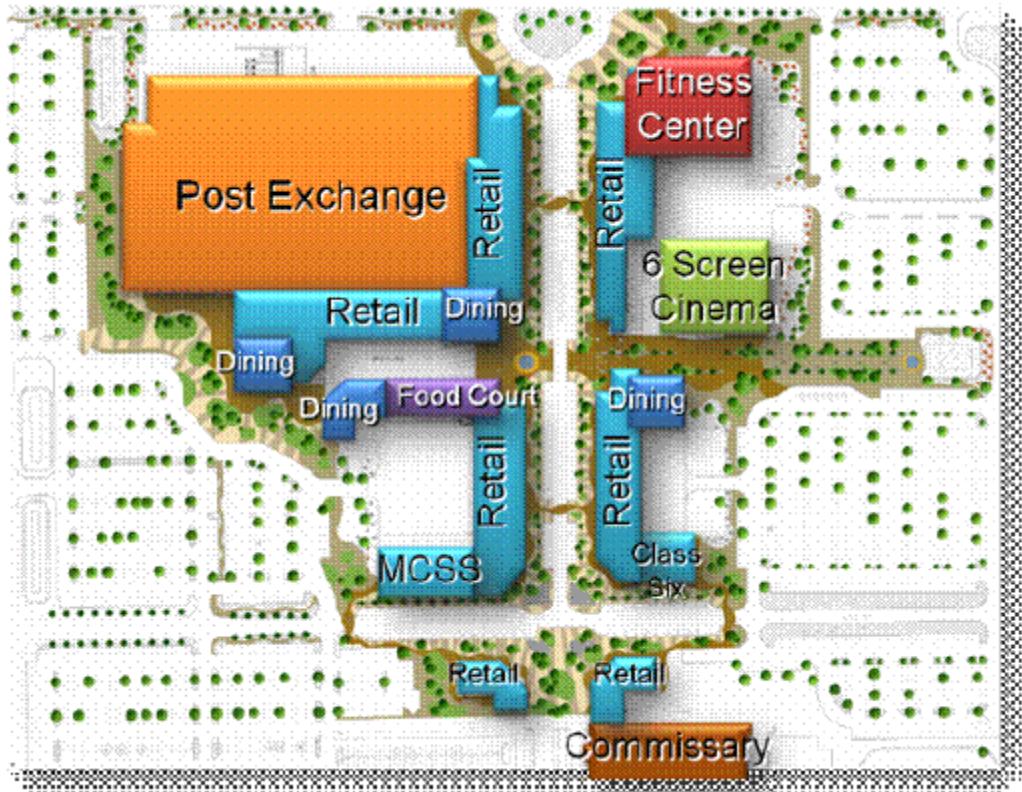


Figure 3. Proposed Site of the AAFES Lifestyle Center



**Figure 4. Potential Layout of the AAFES Lifestyle Center**

## **APPENDIX G**

### **CALCULATIONS TO SUPPORT THE TRAFFIC IMPACT ANALYSES**



Chris Vogelsang  
Ordonez and Vogelsang, LLC  
1701 Wynkoop St Ste 127  
Denver, CO 80202

Phone: 303-898-8042  
E-Mail: chris@ovllc.com

Fax: 720-554-7630

## PLANNING ANALYSIS

Analyst: Vogelsang  
Intersection: SH 85/SH 189  
Agency/Co.: OV  
Area Type: All other areas  
Date Performed: 6/27/2008  
Jurisdiction: Okaloosa County  
Analysis Time Period: PM Peak Hour w/out site  
Analysis Year: 2011  
Project ID: Eglin AFB

SH 189      East/West Street      SH 85      North/South Street

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	2	0	1	2	0	1	2	0	1	2	0
Volume	100	468	0	133	925	0	494	951	0	200	824	0
Parking		N			N			N			N	
Coord.		N			N			N			N	
LT Treat.	?			?			?			?		
Peak hour factor:	0.95			Area Type: All other areas								

LANE VOLUME WORKSHEET

EAST	WEST	NORTH	SOUTH
BOUND	BOUND	BOUND	BOUND

### LEFT TURN MOVEMENT

1. LT volume	100	133	494	200
2. Opposing mainline volume	925	468	824	951
3. Number of exclusive LT lanes	2	1	1	1
Cross Product [2] * [1]	92500	62244	407056	190200

Left Lane Configuration (E=Excl, S=Shrd) : E E E E  
Left Turn Treatment Type: P U P P

4. LT adjustment factor	0.920	1.000	0.950	0.950
5. LT lane vol	54	0	520	211

## RIGHT TURN MOVEMENT

## RIGHT TURN MOVEMENT

### Right Lane Config

5. RT volume	0	0	0	0
7. Exclusive lanes	0	0	0	0
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume				
10. Shared lane vol	0	0	0	0

## THROUGH MOVEMENT

11. Thru volume	468	925	951	824
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	2	2
14. Total approach volume	468	925	951	824
15. Prop. of left turns in lane group	0.00	0.00	0.00	0.00
16. Left turn equivalence		2.23		
17. LT adj. factor:				
18. Through lane volume	234	462	476	412
19. Critical lane volume	234	462	476	412

Left Turn Check (if [16] > 3.5)

20. Permitted left turn sneaker capacity:  
7200/Cmax

**SIGNAL OPERATIONS WORKSHEET**

Phase Plan Selection from Lane Volume Worksheet	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND			
Critical through-RT vol: [19]	234	462	476	412			
LT lane vol: [5]	54	0	520	211			
Left turn protection: (P/U/N)	P	U	P	P			
Dominant left turn: (Indicate by '<')		<					
Selection Criteria based on the specified left turn protection	Plan 1: U	U	U	U			
	Plan 2a: U	P	U	P			
	Plan 2b: P	U	P	U			
< Indicates the dominant left turn for each opposing pair	Plan 3a:<P	P	<P	P			
	Plan 3b: P	<P	P	<P			
	Plan 4: N	N	N	N			
Phase plan selected (1 to 4)		2b	3a				
Min. cycle (Cmin) 90		Max. cycle (Cmax) 230					
Timing Plan	Value	EAST-WEST	NORTH-SOUTH				
		Ph 1	Ph 2	Ph 3	Ph 1	Ph 2	Ph 3
Movement codes		ETL	EWT		NSL	NTL	NST
Critical phase vol [CV]	1448	54	462	0	211	309	412
Critical sum [CS]							
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1624						
Lost time/phase [PL]		4	4	0	4	0	4
Lost time/cycle [TL]	16						
Cycle length [CYC]	147.6						
Phase time		8.9	46.0	0.0	23.2	28.1	41.5
Critical v/c Ratio [Xcm]	1.00						
Status	At capacity						

Chris Vogelsang  
Ordonez and Vogelsang, LLC  
1701 Wynkoop St Ste 127  
Denver, CO 80202

Phone: 303-898-8042 Fax: 720-554-7630  
E-Mail: chris@ovllc.com

## PLANNING ANALYSIS

Analyst: Vogelsang  
Intersection: SH 85/Site Access 3  
Agency/Co.: OV  
Area Type: All other areas  
Date Performed: 6/27/2008  
Jurisdiction: Okaloosa County  
Analysis Time Period: PM Peak Hour  
Analysis Year: 2011  
Project ID: Eglin AFB

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	2	1	0	0	1	0	2	2	1	1	2	1
Volume	352	10	524	10	10	10	481	1124	10	10	1129	314
Parking	N			N			N			N		
Coord.	N			N			N			N		
LT Treat.	?			?			?			?		
Peak hour factor:	0.95			Area Type: All other areas								

LANE VOLUME WORKSHEET

EAST    WEST    NORTH    SOUTH  
BOUND    BOUND    BOUND    BOUND

---

## LEFT TURN MOVEMENT

1. LT volume	352	10	481	10
2. Opposing mainline volume	20	534	1443	1134
3. Number of exclusive LT lanes	2	0	2	1
Cross Product [2] * [1]	7040	5340	694083	11340

Left Lane Configuration (E=Excl, S=Shrd) :      E      S      E      E  
Left Turn Treatment Type:                              P      U      P      U

4. LT adjustment factor	0.920	0.920	1.000	
5. LT lane vol	191	0	261	0

## RIGHT TURN MOVEMENT

Right Lane Configuration (E=Excl, S=Shrd)	S	S	E	E
6. RT volume	524	10	10	314
7. Exclusive lanes	0	0	1	1
8. RT adjustment factor	0.850	0.850	0.850	0.850
9. Exclusive RT lane volume			12	369
10. Shared lane vol	616	12		

## THROUGH MOVEMENT

11. Thru volume	10	10	1124	1129
12. Parking adjustment factor	1.00	1.00	1.00	1.00
13. No. of thru lanes including shared	1	1	2	2
14. Total approach volume	626	22	1124	1129
15. Prop. of left turns in lane group	0.00	0.33	0.00	0.00
16. Left turn equivalence		2.38		4.24
17. LT adj. factor:		0.930		
18. Through lane volume	626	24	562	564
19. Critical lane volume	626	24	562	564

20. Permitted left turn sneaker capacity: 31 31  
7200/Cmax

1

SIGNAL OPERATIONS WORKSHEET

Phase Plan Selection from Lane Volume Worksheet	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND			
Critical through-RT vol: [19]	626	24	562	564			
LT lane vol: [5]	191	0	261	0			
Left turn protection: (P/U/N)	P	U	P	U			
Dominant left turn: (Indicate by '<')							
Selection Criteria based on the specified left turn protection	Plan 1: U	U	U	U			
	Plan 2a: U	P	U	P			
	Plan 2b: P	U	P	U			
< Indicates the dominant left turn for each opposing pair	Plan 3a:<P	P	<P	P			
	Plan 3b: P	<P	P	<P			
	Plan 4: N	N	N	N			
Phase plan selected (1 to 4)		2b		2b			
Min. cycle (Cmin) 90		Max. cycle (Cmax) 230					
Timing Plan	Value	EAST-WEST	NORTH-SOUTH				
		Ph 1	Ph 2	Ph 3	Ph 1	Ph 2	Ph 3
Movement codes		ETL	EWT		NTL	NST	
Critical phase vol [CV]	191	435	0	261	564	0	
Critical sum [CS]	1451						
CBD adjustment [CBD]	1.00						
Reference sum [RS]	1624						
Lost time/phase [PL]		4	4	0	4	4	0
Lost time/cycle [TL]	16						
Cycle length [CYC]	150.2						
Phase time		21.7	44.2	0.0	28.1	56.2	0.0
Critical v/c Ratio [Xcm]	1.00						
Status	At capacity						

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Ordonez and Vogelsang, LLC  
1701 Wynkoop St Ste 127  
Denver, CO 80202

Phone: 303-898-8042  
E-Mail: chris@ovllc.com

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## PLANNING ANALYSIS

Analyst: Vogelsang  
Intersection: SH 189/Site Access 2  
Agency/Co.: OV  
Area Type: All other areas  
Date Performed: 6/27/2008  
Jurisdiction: Okaloosa County  
Analysis Time Period: PM Peak Hour  
Analysis Year: 2011  
Project ID: Eglin AFB

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Num. Lanes	0	2	1	1	2	0	1	0	1	0	0	0
Volume	0	834	172	374	1122	0	187		408			
Parking		N		N			N					
Coord.		N		N			N					
LT Treat.	?			?			?					
Peak hour factor:	0.95			Area Type: All other areas								

LANE VOLUME WORKSHEET

EAST      WEST      NORTH      SOUTH  
BOUND    BOUND    BOUND    BOUND

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### LEFT TURN MOVEMENT

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1. LT volume	0	374	187
2. Opposing mainline volume	1122	1006	0
3. Number of exclusive LT lanes	0	1	1
Cross Product [2] * [1]	0	376244	0

Left Lane Configuration (E=Excl, S=Shrd) : S E E  
Left Turn Treatment Type: U P N

4. LT adjustment factor 0.950 0.850  
5. LT lane vol 0 394 220

## RIGHT TURN MOVEMENT

Right Lane Configuration (E=Excl, S=Shrd)	E	S	E
6. RT volume	172	0	408
7. Exclusive lanes	1	0	1
8. RT adjustment factor	0.850	0.850	0.850
9. Exclusive RT lane volume	202		480
10. Shared lane vol		0	

## THROUGH MOVEMENT

11. Thru volume	834	1122	0
12. Parking adjustment factor	1.00	1.00	1.00
13. No. of thru lanes including shared	2	2	0
14. Total approach volume	834	1122	0
15. Prop. of left turns in lane group	0.00	0.00	0.00
16. Left turn equivalence	4.19		
17. LT adj. factor:	1.000		
18. Through lane volume	417	561	0
19. Critical lane volume	417	561	480

Left Turn Check (if [16] > 3.5)  
20. Permitted left turn sneaker capacity: 31  
7200/Cmax

**SIGNAL OPERATIONS WORKSHEET**

Phase Plan Selection from Lane Volume Worksheet	EAST BOUND	WEST BOUND	NORTH BOUND	SOUTH BOUND
Critical through-RT vol: [19]	417	561	480	
LT lane vol: [5]	0	394	220	
Left turn protection: (P/U/N)	U	P	N	
Dominant left turn: (Indicate by '<')				
Selection Criteria based on the specified left turn protection	Plan 1: U	U	U	U
	Plan 2a: U	P	U	P
	Plan 2b: P	U	P	U
< Indicates the dominant left turn for each opposing pair	Plan 3a:<P	P	<P	P
	Plan 3b: P	<P	P	<P
	Plan 4: N	N	N	N
Phase plan selected (1 to 4)		2a		1
Min. cycle (Cmin) 90		Max. cycle (Cmax) 230		
Timing Plan	Value	EAST-WEST	NORTH-SOUTH	
		Ph 1	Ph 2	Ph 3
		Ph 1	Ph 2	Ph 3
Movement codes		WTL	EWT	NST
Critical phase vol [CV]	1291	394	417	0
Critical sum [CS]				480
CBD adjustment [CBD]	1.00			0
Reference sum [RS]	1624			0
Lost time/phase [PL]		4	4	0
Lost time/cycle [TL]	12			0
Cycle length [CYC]	90.0			0
Phase time		27.8	29.2	0.0
Critical v/c Ratio [Xcm]	0.92			33.0
Status	Near capacity			0.0

**APPENDIX H**  
**CULTURAL RESOURCES DOCUMENTATION**



**CULTURAL RESOURCES SURVEY OF  
THE PROPOSED GRADUATE ENGINEERING AND RESEARCH CENTER  
EGLIN AIR FORCE BASE  
OKALOOSA COUNTY, FLORIDA**

**Prepared By**

**New World Research, Inc.  
P.O. Box 4246  
Fort Walton Beach, Florida 32549**

**For**

**Woodward-Clyde Federal Services  
2014-B Lewis Turner Boulevard  
Fort Walton Beach, Florida 32548**

**New World Research, Inc.  
Report of Investigations No. 206  
1991**

## CHAPTER ONE PROJECT BACKGROUND

### Introduction

In July, 1991, New World Research, Inc. (NWR) was asked by Woodward-Clyde Federal Services to submit a proposal and cost estimate to conduct Phase 1 cultural resources investigations over a 110ac tract scheduled for development as an engineering and research center at Eglin Air Force Base. The notice to proceed was given in September of 1991 and the work was carried out during the week of September 23, 1991.

### General Setting

Eglin is situated in the Florida Panhandle in portions of Okaloosa, Santa Rosa and Walton counties (Figure 1). Air Force property includes a variety of settings from interior uplands to coastal zones. Major bodies of water include the Gulf of Mexico, Choctawhatchee Bay and East Bay.

Physiographically, Eglin lies within the Coastal Plains Province, which is comprised of two divisions: the Western Highlands and the Gulf Coastal Lowlands. The division is a direct result of the higher sea levels of the past; ancient seas eroded into the Citronelle Highlands (Western Highlands) and produced the Coastal Plains. The Western Highlands slope to the south in a subtle fashion. As sea level dropped in an episodic manner, it produced the Gulf Coastal Lowlands, a landscape generally less than 30m above mean sea level. The zone generally encompasses only the shoreward 16km and is characterized by a relatively undissected surface. Transecting the project area from south to north would take one from modern, quartz sand beaches through a series of often poorly differentiated, sandy marine terrace deposits of Quaternary age, to a thick sequence of sands containing lenses of fine gravel and clay.

The area is characterized by a warm, humid, temperate climate (U.S. *Dept. of Commerce* 1972). Precipitation occurs mostly as rain with annual totals approximating 1,650mm; very little of the precipitation occurs as snow, hail or fog drip. Temperature extremes are moderated

by the Gulf. Average summer temperature is approximately 27°C, whereas winter is approximately 12°C. The annual average is about 19°C.

Storms have always had a major climatological and geomorphological impact on the Gulf Coast (e.g., *Simpson and Riehl 1981; Balsillie 1986*). Tropical storms moving along the Gulf Coast have been documented since 1872 (U.S. *Army Corps of Engineers 1986*). Since then, between 35 and 45 tropical storms, many reaching hurricane strength, have moved across the area. Hurricane Frederick, in 1979, was the most recent major storm to strike the coast and affect the area. In the years since, two hurricanes, Elena and Juan, both in 1985, have left recognizable, but less notable, marks on the landscape.

## **Project Setting**

The survey tract is in Okaloosa County and is situated south-southwest of Lewis Turner Boulevard and north-northeast of the Longwood subdivision and Gamier **Bayou** (Figure 2). Gamier Creek is located to the northwest of the tract and a small, intermittent stream can be found just to the east which empties into Poquito Bayou to the south.

On the USGS quadrangle maps, this 110ac area appears to host locales which would have been suitable for prehistoric or historic occupation. The tract is within 200m of water and contains settings less than 50ft above water.

Vegetation in the area consists of scrub oak and pine. The ground cover consists of leaves and a few scattered palmettos. Secondary growth has been stunted by the thick overstory.

Some disturbance from military activity is evident from a number of depressions that resemble foxholes. In addition, a former fire break and an old road are evident in the areas of high site probability. Overall, evidence of disturbance is minimal, although it is difficult to gauge the effects of previous timbering activities. Small amounts of recent historic trash are also lightly scattered over portions of the area; these items include beer cans, bottles, plastic, etc.

## **Report Organization**

Following the introduction is a brief overview of the culture history of the area (a more detailed reconstruction of areal culture history can be found in Thomas and Campbell [*ed.* 1991]). The final chapter of this report describes the procedures by which the project was carried out and presents a summary of findings.

## CHAPTER THREE

### PHASE 1 CULTURAL RESOURCES INVESTIGATIONS

#### Background and Literature Search

In preparation for the work, NWR consulted the draft Historic Preservation Plan (Thomas and Campbell, ed. 1991). According to that document, the proposed development tract contains two areas that are considered high in site probability. These areas, labeled HPA 1 and HPA 2, are shown in Figure 4.

The designation of these two portions of the property as high probability areas was based on different factors in each case. According to a 1929 Forest Service map, the area designated as HPA1 once contained a structure (labeled USFS56) belonging to M. Brown. The reported location of the structure and the land immediately surrounding it constitute a high probability area. In conformity with the HPP directives, all high probability locales threatened with adverse impact must be subjected to an intensive cultural resources survey before construction can begin. In view of the potential presence of an historic site, part of the survey was focused on locating and identifying any remains or features associated with this structure.

The other high probability area, HPA2, is shown on the map as such (see Map Volume 1, Eglin HPP) because of its close proximity to a water source. According to USGS topographical maps, this area of the survey tract is located within 200m of water and is elevated less than 50ft above water, and thus meets the criteria for designation as a high probability area.

Other than USFS56, the draft HPP indicates no historic structures or archaeological sites within the survey tract. Two structure locations, USFS57 and USFS58, are situated about one-third of a mile to the east and 80k107, a potentially significant site, is located due south. Davis Cemetery lies to the west of the project area and two other structure locales, USGS116 and USGS 117 (both identified from old USGS quadrangle maps), and one potentially eligible site, 80k194, are northwest of the survey tract. No attention was given to the relocation and examination of these sites because they are located well outside the area of potential impact.

#### Survey Procedures and Results

##### HPA1

The survey was carried out by a three-person crew, including the project director. Investigations began in HPA1, the area of the reported structure, USFS56. A general reconnaissance was first made of HPA1, revealing turpentine cups (2) and metal cans. This area was flagged for later attention. An old road crosses the southern part of HPA 1 in an east-west direction. A concentration of brick and concrete was observed on the dirt road and this area was also flagged as a possible location of USFS56.

After the reconnaissance, the survey crew traversed HPA1 along transects set at 30m intervals. Four passes of the area were made, resulting in thorough coverage. The surface was inspected during survey along these transects, but only the aforementioned brick and concrete and turpentine cups and metal cans were observed.

In addition to the transects, the old road and a jeep trail that it connects with were

thoroughly surveyed. A power line that crosses the project area was also surveyed.

To investigate the subsurface potential for the presence of historic and prehistoric remains, a total of 17 50cm by 50cm shovel tests were excavated along the survey transects and in judgmental locations throughout HPA1 (Figure 4). The shovel tests varied in depth to a maximum of 70cm below surface. A number of the pits were placed in the vicinity of the brick and concrete concentration. The profiles of these pits consisted of two strata: the upper stratum was a yellowish brown (10YR5/6) medium sand, underlain by a brownish yellow (10YR6/8) medium fine sand. In the shovel tests outside the concentration, a somewhat different stratigraphy was observed. The upper stratum consisted of brown (10YR5/3) medium sands, underlain by the brownish yellow (10YR6/8) medium sand. Several of the pits varied somewhat in the color and texture of the sands, but the differences were minor and no cultural remains or indications of features or midden were observed in any of them.

Subsequent to these efforts, a metal detector survey was conducted in the area. No subsurface concentrations of metal were detected in all of HPA1. The only items that registered were the aforementioned turpentine cups, metal cans and some discarded tin foil.

## **HPA2**

HPA2 is situated around the headwaters of a Rank 1 stream that ultimately flows into Hand Cove. The entire area was casually walked to provide an initial impression of site probability. At the time of survey, the stream held no water and did not appear to have held water for a long time. In fact, the drainage is more of a swale and barely apparent when walking along a jeep trail that cuts across it.

A total of six 50cm by 50cm shovel tests were excavated in HPA2 (Figure 4). Shovel tests were deeper in this HPA, with the average being just slightly over a meter in depth. The two strata observed were an upper zone of light brownish gray (10YR6/2) fine sand and an underlying yellowish brown (10YR5/4) medium sand zone. No artifacts were recovered in any of the units and there was no indication of features or midden.

Some oyster shell was observed in the drainage and one shovel test (#14) was excavated there to investigate the possibility of a shell midden. The stratigraphy in that pit was identical to the other shovel tests and lacked any indication of midden. The shell observed on the surface of the drainage must have been related to recent dumping.

Piles of trash were also observed along the jeep trail, including 55 gallon drums and other metal objects. In the vicinity of shovel tests 11 and 12, there is evidence of military activity (e.g., foxholes) and naval stores activities, the latter represented by the recovery of a rectangular, metal turpentine cup. Besides recent discard, no cultural remains were noted in HPA2.

## **Discussion**

No prehistoric remains were recovered during the Phase 1 survey. Historic materials were limited to a concentration of bricks and concrete in HPA 1 and scattered refuse of various kinds.

We initially believed that the reported structure, USFS56, was one of the buildings associated with the 1904 homestead of Manuel Brown (M. Brown or a relative) as described by Hill (1916). Two other reported structures belonging to M. Brown, USFS57 and USFS58, are located a short distance to the east of the survey tract and may be the remains of what Hill described as a one-room log structure and a three-room frame house. A thorough survey of

HPA1, however, failed to turn up any structural remains besides concrete and bricks of a type that was not produced until sometime after the 1930s. If a structure of any kind existed, it may have been moved when Eglin acquired the property or it may have been razed as part of Eglin's land preparation program.

Besides recent discard, the only cultural remains were two turpentine cups in HPA1 and one in HPA2. These are considered isolated remains rather than sites. They were probably discarded or abandoned by laborers in the naval stores industry. Several trees in the area bore the marks of turpentine extraction.

The drainage in HPA2 looked like an ideal prehistoric settlement location on the USGS quadrangle map. In reality the drainage held no water, appeared to be more of a swale and the contours were almost indiscernible in the field. This discrepancy underscores the problem of relying on these maps for the prediction of site potential. There are, however, other areas on Eglin where flowing creeks are noted in the field but do not appear on the maps. Obviously, we must use these maps as they are the best source for plotting probability areas. It must be remembered, however, that discrepancies may occur between the appearance of areas on the maps and what is actually observed in the field.

### **Recommendations**

The survey crew conducted a thorough and intensive examination of the proposed Graduate Engineering and Research Center property. No significant or potentially significant cultural resources were located and none are threatened with adverse impact. Accordingly, we recommend that development be allowed to proceed as planned. We do advise Eglin, however, that other historic structures and potentially eligible sites are located in the surrounding area. Any changes that could result in impacts outside those high probability areas already investigated must be reviewed according to the guidelines set forth in the draft HPP. Survey is required in all high probability areas and testing will be required at potentially significant sites.

**EGLIN AIR FORCE BASE  
INTEGRATED CULTURAL RESOURCE  
MANAGEMENT PLAN  
IMPLEMENTATION**

**EGLIN AFB  
OKALOOSA, SANTA ROSA AND WALTON COUNTIES, FLORIDA**

**FINAL MARCH 2004**

**APPROVED BY**

---

**EDMOND B. KEITH,  
COLONEL, USAF  
COMMANDER, 96<sup>TH</sup> AIR BASE WING**

**PROGRAMMATIC AGREEMENT  
BETWEEN  
THE AIR ARMAMENT CENTER, EGLIN AIR FORCE BASE,  
THE ADVISORY COUNCIL ON HISTORIC PRESERVATION AND  
THE FLORIDA STATE HISTORIC PRESERVATION OFFICER**

**REGARDING THE PRESERVATION AND PROTECTION OF HISTORICAL AND  
ARCHAEOLOGICAL RESOURCES LOCATED AT EGLIN AIR FORCE BASE, FLORIDA**

**WHEREAS**, the Air Armament Center (AAC), Eglin Air Force Base, Florida, the Florida State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (Council) acknowledge that maintenance, construction, demolition, alteration, and repair of facilities and properties within Eglin AFB have the potential to affect historic properties included, or eligible for inclusion, in the National Register of Historic Places (NRHP);

**WHEREAS**, Eglin AFB's Cultural Resources Management Plan (CRMP) will establish policies, responsibilities and procedures for the protection of historic and cultural resources within Eglin AFB and reflects the intent of the Department of Defense to provide conscientious stewardship of historic and cultural resources located on properties owned or controlled by the Department of Defense;

**WHEREAS**, the CRMP will be designed to provide a framework within which historic and cultural resources at Eglin AFB are managed in a manner consistent with federal law and the mission of Eglin AFB and its tenants;

**NOW, THEREFORE**, the parties agree that undertakings which have the potential to affect historic properties within Eglin AFB shall be carried out in accordance with the CRMP and the following stipulations, in order to satisfy the requirements of Section 106 of the National Historic Preservation Act, 16 U.S.C. 470(f), and the Council's implementing regulation, 36 CFR Part 800, Protection of Historic Properties.

**STIPULATIONS**

**1. PARTICIPANTS IN SECTION 106 PROCESS**

AAC will ensure participants identified in 36 CFR Part 800.2(c) are included in the Section 106 consultation process, as appropriate.

**2. STANDARDS AND GUIDELINES**

AAC will ensure that all undertakings affecting historic properties will conform to *The Secretary's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and applicable guidelines (Standards and Guidelines), incorporated herein by reference.

**3. IMPLEMENTATION OF CRMP OBJECTIVES**

AAC will implement the CRMP in consultation with the appropriate participants identified in 36 CFR Part 800.2(c).

#### 4. IDENTIFICATION OF HISTORIC PROPERTIES AT EGLIN AFB

A. AAC will prepare a list of historic properties and a Historic Buildings Location Map of Eglin AFB within 60 days of the date of the execution of this Agreement and an Archaeological Sensitivity Map of Eglin AFB within 1 year of the date of execution of this Agreement:

(1) Historic Buildings Location Map. The Historic Buildings Location map will identify:

a. Historic structures included in, or eligible for inclusion in, the NRHP; and

b. Boundaries, or proposed boundaries of historic districts, which may be included in, or eligible for inclusion in, the NRHP.

(2) Archaeological Sensitivity Map. The Archaeological Sensitivity Map will identify:

a. Known archaeological sites included in, or eligible for inclusion in, the NRHP;

b. Areas in which currently unknown archaeological sites may be located which may be eligible for inclusion in the NRHP.

The location of all archaeological sites will remain confidential pursuant to 36 CFR 800.11(c).

B. The list and maps will be reviewed and updated annually by AAC in consultation with the SHPO. For the purpose of this Agreement, historic properties are defined in 36 CFR 800.16 (1) to be "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria. The term eligible for inclusion in the National Register includes both properties formally determined as such in accordance with regulations of the Secretary of the Interior and all other properties that meet the National Register criteria."

#### 5. EXEMPTED ACTIONS

The Base Historic Preservation Officer (BHPO) will serve as the liaison between the SHPO, Council, AAC and all other identified consulting parties. AAC's BHPO will, in consultation with the SHPO, establish a process that will ensure the actions described below are appropriately reviewed by the BHPO prior to any undertaking. When review has been completed by the BHPO, the following actions will be exempt from further consultations:

A. Maintenance, construction, demolition and ground disturbing activities which do not affect historic properties.

B. Maintenance, repair and/or replacement of existing subsurface structures and roads, runways and existing utilities, so long as any ground disturbing activities are performed within previous construction limits as the original work and do not adversely affect archaeological sites.

C. Any emergency work of the following description:

- (1) Protection of the human health and/or the environment from damage or harm by hydrocarbon or hazardous materials;
- (2) Prevention of imminent damage resulting from the threat of hurricane, tornado or other natural disaster;
- (3) Stabilization necessitated by the threat of imminent structural failure (e.g. repair or replacement of building footings); and actions waived from the usual procedures of Section 106 compliance, pursuant to 36 CFR Part 800.12 (d).

D. Interior maintenance or repair performed in accordance with the Standards and Guidelines, which does not adversely affect the character-defining interior features or spaces of an historic property.

E. Routine maintenance of historic properties is defined as follows:

- (1) Repainting (provided that surface preparation does not damage, erode or otherwise disfigure historic building materials);
- (2) Repair or replacement in kind of less than 5% of total historic materials, finishes and features;
- (3) Removal or in-kind replacement of non-historic materials, finishes and features;
- (4) Removal of non-original intrusive surface applied elements such as exterior wall-mounted conduits, pipes, wiring and junction boxes;
- (5) Replacement or installation of caulking and weather-stripping around windows, doors, walls and roofs;
- (6) Repair and replacement in kind of deteriorated or damaged trim, hardware, doors, gutters, porches, steps, roofs or parts of a roof, and window or door screens;
- (7) Replacement of glass, which shall in no case alter existing window material or form, and which may allow for the placement of double or triple glazed windowpanes with clear glazing, but shall not allow for the placement of tinted glass (which will require consultation);
- (8) Maintenance of historic features such as frames, paneled or decorated jambs or moldings through surface treatments such as cleaning, rust removal, paint removal, and re-application of protective coating systems, which shall not include sandblasting for cleaning surfaces or removing rust or paint;
- (9) Repair of historic window and door frames by patching, splicing, consolidating, or otherwise reinforcing or replacing those parts that are either extensively deteriorated or are missing, where the same configuration of panes or door panels will be retained;

F. The installation and maintenance of new security and fire protection equipment and materials, including fire detection systems, fire suppressant systems, security systems and security devices such as dead bolts, door locks, window latches, and door peepholes. (No original security devices will be removed.)

G. Routine landscaping and lawn maintenance or repair that does not adversely affect the exterior appearance or the character defining historic features or spaces of an historic property. Routine landscaping and lawn maintenance or repair includes the following:

- (1) Normal mowing, pruning, shearing, watering and feeding;
- (2) Limb or whole removal of vegetation, shrubs, or trees determined to be a safety hazard;
- (3) Removal and replacement in kind of vegetation; and
- (4) Maintenance and replacement in kind of planters, flowerbeds, sidewalks, walkways, fences and freestanding signage.

H. For the purposes of this Agreement, notwithstanding the above, the following types of activities shall not be considered routine maintenance when involving historic materials, finishes, and features of historic properties:

- (1) Masonry cleaning and repair;
- (2) Replacement of deteriorated materials, finishes and features with elements that do not conform to the Standards and Guidelines;
- (3) Application of nontraditional or historically inappropriate masonry coatings, including the painting of previously unpainted historic masonry, masonry consolidants and waterproof/water repellent coatings; and
- (4) Replacement of deteriorated materials, finishes and features which comprise more than 5% of the total area of a historic property.

I. For maintenance and repair activities not specifically identified above, consultations with the SHPO will be completed prior to initiating the undertaking.

J. The BHPO has the discretion to determine that a proposed activity, while generally qualifying as a maintenance or repair activity specifically identified above, may nonetheless present unique circumstances which, in the BHPO's discretion, mandate consultation. These unique circumstances may include, but are not limited to, instances where the activity:

- (1) Is of greater scope or size than generally anticipated by this Agreement;
- (2) Poses a potential for degradation (even though slight) of an already marginal or poor historic property; or
- (3) Utilizes nontraditional, unproven technology and or materials.

## 6. REHABILITATION, LONG-TERM MAINTENANCE AND PRESERVATION OF HISTORIC STRUCTURES

A. Historic properties shall be preserved, maintained and rehabilitated in accordance with the recommended approaches in the Standards and Guidelines. For the purposes of this Agreement, the term "rehabilitation" shall include construction activities commonly referred to as "remodeling" and "renovation."

B. All design and construction documents developed pursuant to this Agreement shall be developed in consultation with the SHPO. Unless agreed to in advance on a project-specific basis, design submission documents prepared pursuant to this Agreement shall be made by AAC and submitted to the SHPO at the completion of the conceptual schematic, advanced schematic, design development and contract document phases of structural maintenance, repair and rehabilitation projects.

C. Rehabilitation of non-historic additions to individual historic properties or to non-contributing structures within historic districts identified in Stipulation 4(A), shall be subject to the provisions of Stipulation 7(A), below.

## 7. CONSTRUCTION

A. AAC shall ensure that all new construction within an historic district identified in Stipulation 4(A) shall be compatible with the scale, massing, color, and materials of the nearby historic properties and shall be designed in accordance with the recommended approaches to new construction set forth in the Standards and Guidelines. Construction not included within a district that may affect an historic property will be reviewed and forwarded by the base historic preservation officer to the SHPO on a case by case basis.

B. AAC shall ensure that the design of all construction affecting historic properties shall be assessed pursuant to 36 CFR Part 800.5. Unless a project-specific agreement has been reached between the AAC and the SHPO, design submission documents prepared pursuant to this Agreement shall be submitted for review at the completion of the conceptual schematic, advanced schematic, design development and contract document phases of construction projects.

C. If an adverse effect is found, AAC will consult further to resolve the adverse effect pursuant to 36 CFR Part 800.6.

## 8. DEMOLITION OF HISTORIC PROPERTIES

A. AAC will ensure that AAC or any tenant or host command does not inadvertently cause the demolition of an historic property. AAC will ensure that the following measures are completed prior to approving any actions that could cause the demolition of an historic property:

(1) A consultation package shall be prepared by AAC when an undertaking is proposed that may result in the demolition of an historic property. The consultation package shall document the reason(s) that the responsible command believes preservation of the historic property is not a prudent and feasible alternative to demolition, and shall be submitted to the SHPO for review. The SHPO shall have 30 days from the date of receipt for review.

(2) The consultation package shall include, in addition to measures in stipulation A, the following information:

- a. The identification of, and location maps for, all affected historic properties, including clearly delineated boundaries for any affected historic district;
- b. An assessment of the effects of the undertaking with regard to historic properties;

c. An analysis of reasonable alternative courses of action considered and the reasons for their rejection; and

d. A description of strategies proposed for mitigating adverse effect(s).

B. If the SHPO determines that AAC has not supported its decision to demolish, AAC (in conjunction with a tenant or host command, if necessary) will consult with the SHPO to develop alternatives to the demolition. The resolution of the adverse effect will continue pursuant to 36 CFR 800.6.

C. If demolition or alteration of historic properties is undertaken, AAC will include, in any Memorandum of Agreement concerning those actions, the stipulation that AAC, in consultation with the SHPO, will, prior to approving the undertaking, identify and, where appropriate, salvage any character-defining historic interior or exterior features of an historic property, when such salvage is reasonable, feasible and prudent.

## 9. RECORDATION OF HISTORIC PROPERTIES

In accordance with AFI 32-7065 and 32-9004, AAC will consult with the SHPO and the Advisory Council on Historic Preservation prior to the demolition of historic properties to determine whether recordation is necessary, and if so, at what level.

## 10. TREATMENT OF ARCHAEOLOGICAL PROPERTIES

A. In consultation with the SHPO, the AAC shall develop a program of archaeological survey to locate, inventory, and evaluate archaeological sites and shall establish a procedure for the protection and preservation of sites included in, or eligible for inclusion in, the NRHP.

B. If an undertaking at Eglin AFB will adversely effect an archaeological site, AAC will resolve the adverse effect pursuant to 36 CFR Part 800.6.

C. If historic properties are discovered during implementation of an undertaking, AAC will proceed pursuant to 36 CFR 800.13.

D. AAC shall actively ensure compliance with the Archaeological Resources Protection Act of 1979 (ARPA) and will advise all contract and Air Force personnel and resident dependents against illegal collection of cultural materials and the penalties for such collection imposed by the Act. Appropriate measures will be developed by AAC for the protection of historic properties from looting and vandalism and for protection under ARPA.

## 11. DISPUTE RESOLUTION

A. Should any of the signatories to this Agreement object within 30 days to any plans or specifications provided for review pursuant to this Agreement, AAC will consult with the objecting party to resolve the objection. If AAC determines that the objection cannot be resolved, AAC will invite the Council to review the relevant documentation pertaining to the issue in dispute. Within 15 days after receipt of all pertinent documentation, the Council will advise the consulting parties as to whether it will comment pursuant to 36 CFR 800.6(a)(1)(iii). Council comment provided in response to such a request will be taken into account by AAC in accordance with 36 CFR Part 800.6(c)(2) with reference to the subject of the dispute. Any recommendation

or comment provided by the Council will be understood to pertain only to the subject of the dispute.

## 12. PROJECT REVIEW, MONITORING, AND TECHNICAL ASSISTANCE

A. The BHPO shall provide to the SHPO for review, plans, specifications and other proposals for work as required pursuant to the terms of this Agreement. The SHPO shall provide comments to AAC within 30 working days of receipt of complete and sufficient project information delivered to:

Division of Historical Resources  
Compliance Review Section  
State Historic Preservation Office  
R.A. Gray Building, Room 423  
500 South Bronough Street  
Tallahassee, Florida 32399-0250  
(850) 245-6333  
Fax (850) 245-6437

B. Documentation sufficient to enable professional evaluation of the proposed undertaking will accompany each review request. Any question regarding the sufficiency of documentation will be resolved through consultation with the SHPO.

C. If the SHPO objects to any element of a plan, specifications, or other proposals for work at Eglin AFB, AAC, in consultation with the SHPO, will consider alternatives to the proposed undertaking. The conclusion of these considerations will be documented in writing by AAC and provided to the SHPO.

D. Should substantial changes be proposed by AAC for plans and specifications previously reviewed by the SHPO, these changes shall be submitted for review and comment pursuant to the terms of the applicable Stipulation of this Agreement.

E. The SHPO shall provide technical assistance, consultation and expert advice when requested to do so by AAC to aid AAC in complying with the terms of this Agreement.

## 13. PROGRAM REVIEW

A. At the end of each state fiscal year, the SHPO or AAC may request a review of the terms and conditions of the Agreement, which may be amended following consultation between the parties.

B. AAC will provide the SHPO an opportunity to inspect work sites and project files to verify adherence to the stipulations of this Agreement. At the SHPO's request, but at least once per year, AAC shall provide information about, or access to all records concerning, undertakings that affect historic properties within Eglin AFB.

C. The BHPO will submit an annual report to the SHPO and the Council within 60 days of the anniversary of the execution of this Agreement. The report will describe the nature and status of the previous year's undertakings which were covered by the terms of this Agreement and reviewed by the BHPO. The report will describe actions taken to implement the terms of the

Agreement, provide suggestions, if appropriate, for modifying or amending the Agreement, and any recommendations for implementing the Agreement over the coming year.

Execution and implementation of this Programmatic Agreement evidences that the AAC has afforded the Council a reasonable opportunity to comment and that the AAC has taken into account the effects of all undertakings carried out under the terms of this Agreement.

FLORIDA STATE HISTORIC PRESERVATION OFFICER

BY: Janet Snyder Hartman DATE: 7/17/02  
TITLE: State Historic Preservation Officer

THE UNITED STATES AIR FORCE, AIR ARMAMENT CENTER

BY: Robert W. Chedister DATE: 11 Aug 02  
TITLE: Commander

ADVISORY COUNCIL ON HISTORIC PRESERVATION

BY: John C. S. Smith DATE: 2/14/03  
(for) TITLE: Executive Director

***CULTURAL RESOURCES***  
***SURFACE EXAMINATION AND COLLECTION OF 8OK1835***  
***EGLIN AIR FORCE BASE, FLORIDA***  
***(TASK ORDER CR-07-0007)***  
***CONTRACT FA4890-04-D-0009-DK01***  
***OKALOOSA, SANTA ROSA AND WALTON***  
***COUNTIES, FLORIDA***

**FINAL**

**BY**

**L. JANICE CAMPBELL  
AND  
JAMES H. MATHEWS**

**JULY 2007**

**PRENTICE THOMAS AND ASSOCIATES, INC.  
REPORT OF INVESTIGATIONS NO. 1010**

## **CHAPTER FIVE**

### **MANAGEMENT RECOMMENDATIONS**

PTA has conducted an intensive program of surface inspection, in-field analysis, and limited collection followed by analysis of materials within three areas proposed for ERP clean-up at 8OK1835. This is a NRHP-eligible site, which is interpreted as the early twentieth century Manuel Brown homestead and associated activity areas.

The effort was conducted according to a work plan approved in consultation with Eglin CR and carried out by professional archaeologists from PTA. With completion of this task, the proposed clean-up by ERP personnel poses no adverse effect to historic remains and may proceed with the assumption there will be no ground disturbance. To ensure that no ground disturbance occurs, PTA recommends a professional archaeologist monitors the clean-up effort.

Eglin is advised that if unexpected discoveries, such as Native American graves or lost historic cemeteries are encountered, guidelines set forth in Chapter 872, F.S. (Florida's Unmarked Burial Law) must be followed. If human remains or unexpected discoveries are encountered during mission activities, work should cease and Eglin's CR Branch must be contacted (850-882-8459). They will notify the Florida SHPO within 24 hours at (850) 245-6333 to begin procedures that are outlined in Chapter 872, F.S.

**EXCERPTED:**

***SURVEY OF X-636***  
***(TASK ORDER CR-02-0029)***  
**CULTURAL RESOURCES SUPPORT,**  
**EGLIN AIR FORCE BASE,**  
**OKALOOSA, SANTA ROSA AND WALTON**  
**COUNTIES, FLORIDA**

**FINAL**

**BY**

**WILLIAM R. MALLORY**  
**AND**  
**L. JANICE CAMPBELL**

**PRENTICE THOMAS AND ASSOCIATES, INC.**  
**REPORT OF INVESTIGATIONS NO. 713**

## CHAPTER FIVE SUMMARY REMARKS

### X-636 Unit Summary

Investigations in the X-636 tract, totaling 527 acres, included the excavation of 527 shovel tests, an intensive surface examination and inspection of all subsurface exposures.

The work resulted in the discovery of two sites and two isolated finds (Figure 21). The isolated finds are categorically ineligible. Table 6 presents the site evaluations.

**Table 6. Summary of Site Findings for X-636.**

TEMP. NO.	SITE NO.	LOCATION	ELIGIBILITY	THREATS	TESTING PRIORITY
X-636-A	8OK1835	X-636	potentially eligible	high	high
X-636-B	8OK1836	X-636	potentially eligible	high	high

### Site Occurrence

Table 7 summarizes characteristics of the sites in X-636. The sites do not fall within the parameters set forth in the HPP predictive model regarding distance to and elevation above water (Thomas and Campbell 1993). However, both of these are historic and it is probable that they contain wells for water.

**Table 7. Site Characteristics.**

Site	Setting	Nearest water	Elevation above water (ft)	Distance from water (m)	Contents
8OK1835	ridge	Poquito Bayou	50	1500	late nineteenth to early twentieth century historic artifacts-Jefferson Davis homestead
8OK1836	ridge	Poquito Bayou	45	1200	late nineteenth to early twentieth century historic artifacts-Manuel Brown homestead



FLORIDA DEPARTMENT OF STATE

**Kurt S. Browning**

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Ms. Maria Rodriguez  
96 CEG/CEVH  
501 Deleon St., Suite 101  
Eglin AFB, Florida 32542-5105

September 14, 2007

Re: DHR No.: 2007-6591 / Received by DHR: August 13, 2007  
*Surface Examination and Collections of 8OK1835, Cultural Resources Management Support, Eglin Air Force Base, Okaloosa, Santa Rosa, & Walton Counties, Florida*

Dear Ms. Rodriguez:

Our office received and reviewed the above referenced survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*, and Chapters 267 and 373, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the *National Register of Historic Places (NRHP)*, or otherwise of historical, architectural or archaeological value.

In November 2006, Prentice Thomas and Associates, Inc. (PTA) conducted a surface examination and collection at Site 8OK1835 on behalf of Eglin Air Force Base. PTA conducted surface collection in preparation for the Environmental Restoration Program (ERP) clean-up of dumping that occurred in the bounds of potentially eligible site 8OK1835.

PTA determined that since surface artifacts associated with Site 8OK1835 have been recovered and no subsurface disturbance is planned, the proposed ERP will have no adverse effect on Site 8OK1835 or other cultural resources. However, PTA recommends that a professional archaeologist monitor project activities at Site 8OK1835.

Based on the information provided, our office concurs with these determinations and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

Director's Office  
(850) 245-6300 • FAX: 245-6436

Archaeological Research  
(850) 245-6444 • FAX: 245-6452

Historic Preservation  
(850) 245-6333 • FAX: 245-6437

Historical Museums  
(850) 245-6400 • FAX: 245-6433

Southeast Regional Office  
(561) 416-2115 • FAX: 416-2149

Northeast Regional Office  
(904) 825-5045 • FAX: 825-5044

Central Florida Regional Office  
(813) 272-3843 • FAX: 272-2340

Ms. Rodriguez  
September 14, 2007  
Page 2

For any questions concerning our comments, please contact April Westerman, Historic Preservationist, by electronic mail at [amwesterman@dos.state.fl.us](mailto:amwesterman@dos.state.fl.us), or by phone at (850) 245-6333. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

A handwritten signature in black ink that reads "Frederick P. Gaske". The signature is cursive and includes a small flourish at the beginning.

Frederick P. Gaske, Director, and  
State Historic Preservation Officer

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